

TOWARD A LEXICON FOR HOLISTIC HEALTH: AN EMPIRICAL ANALYSIS OF  
THEORIES OF HEALTH, WELLNESS, AND SPIRITUALITY

By

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Stephanie Marie Webster

This dissertation is dedicated to Cooper Joseph Morrone-Webster, my son.

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The purpose of this study was to respond to a need for a common lexicon in the area of holistic health through a factor analysis of three fields shaping the definition of health: health, wellness, and spirituality. The procedure for this study involved developing a packet of instruments related to holistic health that would be administered to college students in undergraduate courses. Two instruments each from the disciplines of health, wellness, and spirituality were included in this packet. These instruments were the Rand 36-item Health Survey, the Duke Health Profile, the Wellness Evaluation of Lifestyle TJ-2, the Perceived Wellness Survey, the Spiritual Involvement and Beliefs Scale-Revised, and the Expressions of Spirituality Inventory-Revised. The instruments were administered as a single packet to a sample of 722 students at the University of Florida who were enrolled in undergraduate courses across multiple disciplines.

A principal components factor analysis was used to empirically analyze the data. It yielded 12 factors with eigenvalues above 1.0. Since there was a clear split between the

factors that fell below 2.0, the five factors with eigenvalues above 2.0 were extracted. A second, restricted factor analysis with those five factors confirmed the 5-Factor Solution. Out of the 51 subscales in the 5-Factor Solution, only those that loaded at .40 or above, after the varimax rotation, were retained as part of each factor. The original 51 subscales were reduced to 42 that comprised the 5-Factor Solution.

The five factors were labeled as follows: Environmental Engagement with an eigenvalue of 12.077, Affect with an eigenvalue of 5.261, Physical functioning with an eigenvalue of 3.364, Spiritual Connection with an eigenvalue of 2.597, and Meaning and Purpose with an eigenvalue of 2.042. These five factors demonstrated an important division between internally and externally-focused definitions across all three health fields. Further, the 5-Factor Solution indicated the original physical, mental, and spiritual dimensions of holistic health, while also identifying two other important indicators: Environmental Engagement, and Meaning and Purpose. The findings of this study make an important contribution to continuing efforts to explicate the lexicon of holistic health.

## CHAPTER 1 INTRODUCTION

The changes in the nature of health care have contributed to changes in the definition of health. The change can be linked to two factors. First, chronic health and lifestyle problems, which constitute the majority of visits to doctor's offices, do not respond well to the specialized approach of traditional, biomedical medicine (Wallis, 1996). The traditional, biomedical approach of drugs and surgery has been effective for crisis medicine, but ineffective in treating lifestyle diseases (e.g., cancer, coronary heart disease, arthritis, and diabetes), providing only relief of symptoms (Wallis, 1996). Yet, one-half to two-thirds of all premature deaths in the United States can be attributed to lifestyle factors making the limits of the traditional approach to healthcare a significant concern in current healthcare today. (Myers, Sweeney & Witmer, 2000). A secondary consequence of the increase in life-style-related deaths and limits of traditional approaches to healthcare has been increased public dissatisfaction with the healthcare system and pressure for reform (Myers et al., 2000). One example of public dissatisfaction with the biomedical model has been the surge of interest in healthcare that treats the whole person. In 1990, U.S. citizens spent \$11.7 billion dollars on alternative therapies with holistic approaches to medicine, and \$10.3 billion of this money was spent out of pocket (Andrews, Angone, Cray, Lewis and Johnson, 1999). The changing nature of healthcare has been accompanied by a paradigm shift affecting the way that health is defined.

The transformation of the definition of health can be characterized as moving through three paradigms: dichotomous, multidimensional, and holistic (Neuman, 1995). With the dichotomous paradigm, health represents an either/or proposition: there is either disease or the absence of disease. In the multidimensional paradigm, health is represented as a continuum between disease on one end, and wellness on the other. Finally, the holistic paradigm represents health as a continuous process that is interrelated with the environment. The holistic perspective is a dynamic, relational view of health, in that the healthy individual is “in the process of living or becoming” (Buck, 1996, p. 12).

These transformations in the definition of health are consistent with a larger trend occurring within the sciences (e.g., physics, biology, and social sciences) that is characterized by a movement away from elementalism as a way of describing the world, and toward holism (Ellison & Smith, 1991). Elementalism assumes that human functioning is best understood by looking at specific components of human behavior and considering them separately (Ellison & Smith, 1991). This is also referred to as a reductionist approach to viewing health (in which parts of the body or health are fragmented and independent). From this perspective, “illness within one component is treated without regard to others” (Westgate, 1996, p. 26). In contrast, holism assumes that human functioning is best “understood by studying people as totalities” (Ellison & Smith, 1991, p. 35). Holism suggests that systems are interdependent, and that an integrative view of human nature is the best way to understand healthy, human functioning. Contrary to elementalism, holism views human functioning as a “synthesized whole, and each component is seen as inextricably interrelated with other components” (Westgate, 1996, p. 26).

The shift toward a holistic, integrative view of health, is consistent with other changes in the way scientists now consider complex phenomena. Holistic concepts are being used to explain various systems of the universe ranging from organisms to ecosystems (Richards & Bergin, 1997). From this perspective, nature and the universe are seen as “relational, ecological, and interdependent” (p. 36), and not subject to reductionism (Richards & Bergin, 1997).

### **Definitions of Health**

As science shifted from elementalism toward holism, the definition of health experienced a parallel transformation. Three different constructions of health stand out as prominent markers of Neuman’s (1995) paradigms. The biomedical model of health marks the traditional, dichotomous paradigm; wellness marks the evolution of the multidimensional paradigm; and spirituality marks the holistic paradigm.

Historically, the dominant model in medicine, the biomedical model, characterized health as dichotomous. With the biomedical model, health is described as either the presence or absence of disease. From the biomedical, elementalist perspective, the emphasis is on illness and the consideration of the body in terms of its isolated physiological systems (McSherry & Draper, 1998). Further, assessment and diagnosis is directed at detecting illness and its consequences (e.g., pathology and disability) (Larson, 1999). The assumptions of the dichotomous perspective were challenged by changes in society and science, and an alternative explanation of health evolved. Specifically, technological advances in medicine and society after WWII changed the health needs in the United States, and there was a corresponding need to expand the definition of health beyond just an absence of disease. With the introduction of vaccines and antibiotics, infectious disease no longer qualified as the leading cause of death (Seaward, 1996;

2001). Instead, chronic and lifestyle illnesses (e.g., heart disease, diabetes) associated with the stress of technology in the workplace, became the primary factor in deaths.

With advances in medicine and technology, there was an opportunity for increased attention to health promotion and positive health. This marked the beginning of the wellness movement and the first transformation in the definition of health. The wellness movement introduced an expanded concept of health, that is, the goal of optimal health in all areas of the person (mind, body, and spirit) as opposed to just average health, or health in only certain dimensions of the individual (Donatelle, Snow & Wilcox, 1999). In this way, the notion of health was expanded from a dichotomous variable (disease or absence of disease) to a continuum that captured states of well-being that were positive, or even optimal. In the shift toward positive health, the definition of health also changed from one that was considered to be objective and emphasized disease, toward one that was more subjective with an emphasis on quality of life.

Whereas the wellness movement provided a catalyst for an expanded definition of health, it also served to stimulate the reconsideration of the meaning of health to include the subjective experience, or quality of life. For instance, according to Miller and Thoresen (1999), health is multidimensional in that a person can experience wellness in the presence of disease, or have pain without manifesting disease. This new, multidimensional perspective of health acknowledged the influence of factors other than the physiological ones in the determination of health status (for example, mental and social factors). This shift in perspective changed the definition of health.

The second transformation in the definition of health occurred when spirituality was introduced as a dimension of health in addition to the physiological (body) and the

psychological (mind). The inclusion of spirituality as a factor of health expanded the definition of health to be more relational in that it introduced the idea that all dimensions (body, mind, and spirit) of the individual are interconnected. According to Myers et al. (2000), spirituality is “an awareness of a being or force that transcends the material aspects of life and gives a deep sense of wholeness or connectedness to the universe” (p. 252). Rather than viewing the dimensions of health as fragmented, the inclusion of spirituality led to a consideration of the person as whole. Gross (1980) explained that holistic health proposes that one is “whole in the sense that a living entity is more than the sum of its parts” (p. 96). From the holistic perspective, spirituality is considered the core of wellness and interconnected with all other dimensions of well-being (Chandler, Kolander & Holden, 1992; Witmer & Sweeney, 1992). This newest perspective of health marked the emergence of Neuman’s third paradigm, the holistic perspective.

To summarize, the transformations in the definition of health paralleled the broader shifts in science and society toward a worldview that is more holistic and relational. The holistic perspective shifted the definition of health from an elementalist, reductionistic, and dichotomous perspective to one that is interdependent and relational. Although the biomedical model of health continues to dominate research and practice in the United States, the holistic model is considered the most comprehensive perspective of health in the world (Larson, 1999).

### **Statement of the Problem**

The evolution of a holistic definition of health has been accompanied by certain advantages and disadvantages. One advantage has been an expanded view of health that has allowed practitioners to address the whole person, and therefore to consider the causes of lifestyle illnesses (e.g., social, emotional, and spiritual) rather than just treat



symptoms. This particular advantage has allowed practitioners to consider health from a preventative perspective. A parallel advantage of the holistic perspective is its emphasis on optimal health. The emphasis on optimal health has contributed to research and practices that emphasize quality of life over the life span.

A significant disadvantage has been that the language used to describe health has become more complex and confusing. As the definition of health shifted from an elementalist and dichotomous one to one that is more holistic, the language used to define health has become increasingly inconsistent and fragmented (McSherry & Draper, 1998) (see Appendix G). For example, the World Health Organization (WHO), the first to introduce a holistic model of health, defined it as “physical, mental, and social well-being (Larson, 1999). Yet, a measure designed to include spirituality in the definition of health focused in on three primary areas: mental, physical, and spiritual (Vella-Brodrick, 1995). A discriminant analysis for profiles of health identified five areas: physical, psychological, psychosocial maturity, family functioning, spiritual experience, and spiritual well-being (Buck, 1996). More recently, Miller and Thoresen (1999) proposed that the definition of health should be narrowed to three primary dimensions: suffering, functional ability, and sense of coherence.

As the definition of health expanded to include positive health, the wellness movement began to emerge. Yet as with health, changes in the definition of wellness were accompanied by inconsistencies in the language. In 1984, Hettler described optimal health, or wellness, as having six dimensions: intellectual, physical, emotional, occupational, spiritual, and social. In 1992, a holistic model of wellness proposed by Witmer & Sweeney (1992) identified five different areas of wellness (i.e., spiritual, work,

friendship, love, and self-direction), all of which had sub areas. A more recent model, proposed by Adams, Bezner, and Steinhardt (1997) noted six dimensions of wellness (e.g., physical, social, psychological, intellectual, emotional, and spiritual).

The complexity and fragmentation surrounding the definition of health and wellness have been compounded by a parallel phenomenon regarding research on the spiritual dimension of the holistic perspective. Different researchers have proposed a variety of factors to define the construct of spirituality. Moberg (1984) identified seven factors of spiritual well-being: Christian faith, self-satisfaction, personal piety, subjective spiritual well-being, optimism, religious cynicism, and elitism. Ingersoll (1994) described seven factors of spirituality: meaning, conception of divinity, relationship, mystery, play, experience, and integration of all of dimensions of life. After completing a review of the literature published before 1996, Westgate (1996) narrowed the factors into four common themes: meaning/purpose, intrinsic values, transcendent beliefs/experiences, and community/relationship. Ingersoll (1998) used a delphi study to describe spirituality across cultures, and concluded with a list of ten dimensions of spirituality: Conception of the absolute or divine, meaning, connectedness, mystery, sense of freedom, experience-ritual, forgiveness, hope, knowledge-learning, and present-centeredness. Finally, Hatch (2000) proposed four dimensions of spirituality: Core spirituality (connection, meaning, faith, involvement and experience), spiritual perspective/existential, personal application/humility, and acceptance/insight.

In response to the divergent definitions of spirituality, McSherry and Draper (1998) called for universal terminology across disciplines of what constitutes healthy

functioning. A similar need exists for the definition of holistic health – a universal terminology that would allow for communication across disciplines.

To date, researchers have not responded to the challenge posed by McSherry and Draper (1998). Instead, there has been a second disadvantage of the evolution toward holistic health marked by the tendency of researchers to oversimplify the factors, and dimensions of holistic health. The biomedical model of health, which emphasizes only the physiological dimension, continues to dominate Western health science practice and research (Larson, 1999). Consequently, health research has focused primarily on the dichotomous, elemental perspective of each health construct (e.g., health, wellness, and spirituality), and failed to explicate the new, holistic definitions. For instance, many health instruments and assessment protocols still focus on the functional definition of health (e.g., the physical) and fail to address areas that constitute holistic health (Vella-Brodick, 1995).

Within the search for a lexicon for health, the changing definition of wellness was also complicated by the influence of old, mechanistic paradigms that emphasized function in health and a reductionistic focus on parts of the body. Hermon and Hazler (1999) noted that wellness programs on college campuses tend to examine only the physiological definition of wellness rather than a holistic approach. For instance, early wellness models emphasized clinical (e.g., blood pressure), physiological (e.g., muscular strength), or behavioral (e.g., smoking and diet) manifestations of disease (Adams et al., 1997), but lacked a psychological, developmental basis that would be appropriate across disciplines (Adams et al., 1997; Hattie et al., in press). The original wellness model proposed by Hettler was grounded in the medical profession because Hettler was a

physician (Hattie et al., in press). Recognizing the need for a model of wellness that was multidisciplinary, Witmer and Sweeney (1992) developed a holistic model of wellness across the life-span, the Wheel of Wellness. The Wheel of Wellness represented a much more comprehensive model of wellness, but was not widely used across disciplines.

A comparable situation exists regarding the study of spirituality, with definitions continuing to emphasize religious beliefs and practices, rather than universal themes of spirituality (Hatch et al., 1998). This was problematic because elementalist approaches to religion failed to capture the multidimensional nature of religion as it relates to health. Another problem is that spirituality was considered synonymous with religion.

A major limitation to achieving an understanding of the relationship between religion and health has been the failure to capitalize on developments in defining religion as a complex and multidimensional construct (Ellison and Levin, 1998). Most measures of religious beliefs are defined in terms of external religious behaviors. Investigations that incorporated these measures reported mixed findings about the relationship of spirituality to health since some extrinsic religious behaviors did not correlate with positive mental well-being (Ellison & Levin, 1998). According to Ellison and Levin (1998), certain mechanisms other than religious behaviors might account for the benefits of spirituality on health, such as enhanced social ties and support, increased positive self-concept and emotions, and improved coping strategies.

A second problem relating to oversimplification of religion has been the narrow focus of spiritual measures on monotheistic Judeo-Christian perspectives (MacDonald, LeClair, Holland, Alter & Friedman, 1995; Hatch, Burg, Naberhaus & Hellmich, 1998). For instance, Hatch et al. (1998) noted that the Spiritual Well-Being Scale (SWBS;

Paloutzian & Ellison, 1991) is the most commonly used measure of spirituality, but one that has a narrow, Judeo-Christian perspective. MacDonald, LeClair, Holland, Alter, and Friedman (1995) reviewed measures of transpersonal constructs and found a similar problem with the Intrinsic Religious Motivation Scale (IRMS; Hoge, 1972). Further, in a later review of transpersonal instruments, MacDonald, Kuentzel, and Friedman (1999b) noted a narrow, monotheistic focus in the Spiritual Assessment Inventory (SAI, Hall & Edwards, 1996) that measures two dimensions of relationship with God, as well as in the Spiritual Well-Being Questionnaire (SWBQ, Moberg, 1984) that evaluates institutional religions and relevance of religion and spirituality to overall quality of life. MacDonald, Friedman, and Kuentzel (1999a) pointed out that one measure of religious experience, the Index of Core Spiritual Experiences (Kass, Friedman, Leserman, Zuttermeister & Benson, 1991), which aims to be nondenominational, was too narrow in its focus on monotheistic religions. Hatch et al. (1998) added that other measures of religion have been limited in their narrow focus on assessing beliefs rather than measuring actions, such as the Religious Orientation Scale (Allport & Ross, 1967) and the Index of Religiousness (Zuckerman, Kasl & Ostfeld, 1984).

Efforts dedicated to documenting a multidisciplinary, cross-cultural definition of spirituality have demonstrated that spirituality is not synonymous with religion. Hatch et al. (1998) and others (Fukuyama and Sevig, 1999) explained that there is an overlap between spirituality and religion, yet, the two terms are not synonymous. Although some models of health place spirituality as a separate, but equal dimension to all other dimensions of the individual (e.g., physical, mental, and social), McSherry and Draper (1998) proposed spirituality as a unifying force that integrates all dimensions of the

individual. Miller and Thoresen (1999) have argued that spirituality is multidimensional rather than dichotomous or on a continuum of spiritual to not spiritual. As with personality or character, spirituality is an attribute of all individuals (Miller & Thoresen, 1999). Thus, recent efforts have been made to explicate the nature of spirituality beyond narrow definitions.

A third disadvantage associated with the adoption of more holistic definitions of health is the paucity of interdisciplinary inquiry. As was the tendency in science, Chandler et al. (1992) noted a bias in the wellness research for disciplines to use definitions and language that was applicable only to their own field of research. For instance, medical and health education fields emphasize physical wellness, while counseling emphasizes emotional, social, and occupational wellness (Chandler et al., 1992). As in research on spirituality, holistic health studies have failed to build upon prior research (MacDonald, Friedman & Kuentzel, 1999a). The result has been a lack of empirical progress toward a universal lexicon for the holistic health perspective.

According to Myers et al. (2000), much is known about disease, but not about optimal functioning, wellness, and spirituality. There is a need for research to collect norms and profiles of individuals to get a better picture of the relationship among the three dimensions of well-being (mind, body, and spirit) (Vella-Brodrick & Allen, 1995). Hermon and Hazler (1999) and Myers et al. (2000) noted that there is a gap in the holistic model and a need to understand the relationships among constructs.

### **Purpose of the Study**

The purpose of this study is to empirically examine the relationships among the three constructs that have marked the transformation of the definition of health: health, wellness, and spirituality. These three constructs have been part of the expanding,

increasingly holistic definition of health; however, their complexities have elicited fragmented and inconsistent use in the research. An exploratory factor analysis using instruments that purport to measure parameters of health, wellness, and spirituality will be conducted to investigate the independence or overlap among this defined set of health constructs. The resulting factor structure will then be tested to determine the degree to which the identified factors describe the holistic model of health.

### **Theoretical Rationale for the Study**

The end of the 20<sup>th</sup> century marked the end of the first great phase in science, and the tendency for scientists to specialize “deeper and deeper into their subdisciplines, smugly ignoring the developments in other fields” (Kaku, 1997, p. 12). The scientific revolution in the 16<sup>th</sup> and 17<sup>th</sup> centuries changed the worldview from a spiritual universe to the perspective of the universe as a machine (Capra, 1996). Emphasis in science shifted to understanding the whole through its parts. Labels given to the worldview of the universe as a machine have included the Cartesian paradigm, Newtonian physics, the mechanistic worldview, or classic physics. Newtonian physics was based on mechanistic determination, or the ability to predict events. Valid observations were ones that could be reproduced and verified (Zukav, 2001). The by-product of the Newtonian worldview is that we don’t understand something until we can picture it (Zukav, 2001).

The Romantic Movement in art, literature, and philosophy of the 18<sup>th</sup> and 19<sup>th</sup> century, with its emphasis on relationships and the whole, called the mechanistic paradigm into question. Biologists began to focus on form and relations rather than on material composition (Capra, 1996). However, the discovery of the microscope in the second half of the 19<sup>th</sup> century renewed the focus on parts versus whole organisms. Advances were made in biological cell theory, microbiology, and laws of heredity that

resulted in a new science of biochemistry and the idea that living organisms could be explained by chemical and physical laws (Capra, 1996). Nineteenth century chemists believed that the material world is composed of atoms that are indivisible (Gribbin, 1998).

The Newtonian, mechanistic worldview was called into question again when scientists discovered that an atom has smaller particles in the early 20<sup>th</sup> century (Gribbin, 1998). Newtonian physics did not work when it came to the subatomic realm, it only applied to macroscopic, or large world, phenomena (Zukav, 2001). Thus, there was a need for theories that described both microscopic and macroscopic phenomena in science. The answer to this problem emerged with quantum theory building on the discovery by Max Planck in 1897 that nature is discontinuous and energy is emitted in discrete packets that Einstein labeled quanta in 1905 (Zukav, 2001; Randall, 1996). Quantum mechanics was inclusive of Newtonian physics, but provided a more comprehensive view of nature that was needed with the expanding understandings in science (Zukav, 2001). Einstein described the paradigm shift of quantum mechanics as analogous to climbing a mountain with ever-expanding views (Zukav, 2001).

Twenty-seven years after Planck's introduction, quantum theory was formally introduced into the literature, in 1925, with the work of Erwin Schrodinger and Werner Heisenberg (Kaku, 1997; Zukav, 2001). These scientists proposed three findings: energy is not continuous but discrete energy packets; subatomic particles have properties that dissolve into wavelike patterns of probabilities; and properties of the microscopic world as well as the macroscopic world can be predicted (Kaku, 1997). Quantum physicists struggled with the conceptual shift from parts to a unified whole (Capra, 1996). In



quantum physics, there are no parts, only relationships (Capra, 1996). Probabilities are understood in terms of their interconnections and correlations. “Nature does not show us any isolated building blocks, but rather appears as a complex web of relationships among the various parts of a unified whole” (Capra, 1996, p. 30).

The significance of quantum theory is that it countered the existing paradigm of physics and suggested that separate parts of reality can be connected in ways that don’t follow rules of logic (Zukav, 2001). Quantum logic says that intellect tells us something is impossible, but our eyes see it because experience does not follow classic logic (Zukav, 2001). Von Neumann disproved “universality of classical logic” (Zukav, 2001, p. 311). Whereas prior scientific theories were based on truth and correlations with physical reality, quantum theory introduced the concept that the mind molds reality. Events are chance and quantum theory can only predict probabilities: not events. Quantum theory predicts probabilities not observed by our senses directly; it cannot be conceptualized or visualized (Zukav, 2001). Light was found to be both a particle and a wave, and influenced by how you view it (Zukav, 2001). The wave function was the core mathematical theory of quantum theory and posed that a wave is constantly changing and developing; thus, it is only a function of the observer at that point in time (Zukav, 2001). Approximate knowing was introduced in which one cannot predict the future.

A parallel change in the way scientists view the world emerged shortly after quantum theory. The systems approach was introduced by Ludwig Von Bertalanffy, a biologist in the 1940s, who “set out to replace mechanistic foundations of science with a holistic vision” (Capra, 1996, p. 47). “Whereas Newtonian mechanics was a science of forces and trajectories, evolutionary thinking – thinking in terms of change, growth, and

development – required a new science of complexity” (Capra, 1996, p. 47). Systems thinking was based on the idea that living organisms are open systems because they feed on the environment. Thus, there is constant flow and change (Capra, 1996). Bertalanffy called General Systems Theory, a science of wholeness because the living world is a network of relationships (Capra, 1996).

The key criteria of systems thinking include:

- The whole cannot be reduced to smaller parts because it is the organization and relationships of parts that give the whole its properties.
- Shifting among systems nested within others (e.g., an organism within a city, or a city within an economy) is what gives insights. Each level has properties not existent at lower levels because these properties are emergent based on the relationships.
- The relationship between parts and the whole is reversed. Systems cannot be understood by analysis, but only in the context of the larger whole. This is contextual thinking (Capra, 1996).

The systems paradigm introduced a new epistemology that included both the observer and process in any description of phenomena (Capra, 1996). This reflected findings by Einstein in his Theory of Relativity in 1919. The Theory of Relativity also suggested that there are no absolutes in time and space; all descriptions are influenced by the observer’s perception of the event (Atwood & Maltin, 1991; Randall, 1996). According to systems thinking, all theories are limited and approximate, and can never provide a definitive understanding. Since everything in the universe is connected, one would always be forced to leave something out in the effort to explain something else (Capra, 1996). Thus, systems thinking countered the prior paradigm in which scientific theories could produce certainty and truth (Capra, 1996).

The advantage of the systems theory was that it created a new way of thinking that led to future advances in science. The concept of the living world as a network of

relations influenced language for scientific knowledge. “Since living systems span such a wide range of phenomena, involving individual organisms and their parts, social systems, and ecosystems, Bertalanffy believed that a general systems theory would offer an ideal conceptual framework for unifying various scientific disciplines that had become isolated and fragmented” (Capra, 1996, p. 49). Bertalanffy proposed that systems are part of every field and thus, the general principles apply and can be considered parallel among different disciplines (Capra, 1996). In psychology, social systems described a whole composed of interdependent parts, as well as patterns of oscillation that are impacted by interaction with the larger environment (Atwood & Maltin, 1991).

The idea of fields informing each other corresponds to the concept of a whole that is more than the sum of its parts (Kaku, 1997). Kaku (1997) noted that the possibility exists that there are no autonomous parts, and that what happens in one location is connected to what happens elsewhere in the universe. According to Capra (1996), the universe is a web of life made up of networks of systems that constantly interact. Capra (1996) called the new paradigm holistic because the world is an integrated whole versus separate parts. In the new paradigm, knowledge is a “network of concepts and models in which no part is any more fundamental than the others” (p. 39).

The new paradigm of interconnectivity included the recognition of the role of the observer and language in the understanding of the universe. “Meaning arises as a pattern of relationships among these linguistic distinctions, and thus we exist in a “semantic domain” created by our languaging” (Capra, 1996, p. 290). Zukav (2001) noted that von Neumann and Erwin Schrodinger shaped the language of physicists with their findings in quantum theory, which in turn, shaped their thinking. Von Neumann explored language

to express quantum phenomena and that took him into other fields. According to von Neumann, words are not adequate for explaining quantum phenomena because you can't visualize; thus, "the problem is not in the language, the problem is the language" (Zukav, 2001, p. 290).

Quantum theory was a shift from a linear reality with a truth or clear definition, to "observer bias, interdependent of action and probabilistic thinking (Randall, 1996, p. 194). It is probably for that reason that some scientists have been reluctant to embrace quantum theory. Gribbin (1998) noted that part of the reluctance toward new theories in science about unity, involves a flaw in our imagination and ability to handle concepts more abstractly, rather than a flaw in the theory. According to Gribbin (1998), our minds are not equipped to handle the abstract concepts of quantum theory because they are trained to rely upon what we can observe as real. Thus, the language available to discuss new ideas in science is critical. "In language, we coordinate our behavior, and together in language we bring forth our world" (Capra, 1996, p. 290). This principle also applies to holistic health.

Just as the paradigm shift in science has contributed to a new lexicon of science, so has it brought about changes to the lexicon of health. In primary care, the new sciences have prompted a change in how physicians approach practice from "a base of multiple perspectives, including the patient, the physician, and the community" (Randall, 1996, p. 183). The new paradigm involves a composite of perspectives including family, a team of physicians, the healthcare system, and the community (Randall, 1996). As the sites and disciplines of the observer shift in healthcare, there is a new question about what constitutes the definition of health and disease (Randall, 1996).

### **Significance of the Study**

The primary benefit of this study may be the development of a universal lexicon for holistic health. The benefits of developing a universal lexicon for the holistic definition of health can be categorized primarily under two areas: improvement of research, and in turn, of health care reform. First, a common lexicon for the holistic perspective of health could promote organized progress in the empirical research by increasing interdisciplinary communication (McSherry & Draper, 1998). Second, a universal language for holistic health could improve health care reform by identifying dimensions of health with the potential to improve cost effectiveness through their focus on prevention.

One benefit of a lexicon for the holistic model of health is the ability for enhanced empirical progress through interdisciplinary communication. Kaku (1997) noted that by the year 2005, we should have a complete human code, and therein an owners manual. The discovery was actually made in June, 2000 and published in February 2001 (Human Genome Project, 2002). This discovery influenced science and medicine. It is expected that impasses in understanding computer chips will be informed by new DNA research (Kaku, 1997). Thus, disciplines will progress through advances that are shared by other fields.

Recent national efforts concerning health have emphasized the value of forging partnerships in the goal of achieving national health promotion and disease prevention. For instance, Minkler and Wallerstein (1997) explained that the World Health Organization's new approach to health supports partnerships between governmental and nongovernmental sectors in a goal to create healthy communities. Further, the National Institute of Healthcare Research brought together a multidisciplinary panel of experts

with expertise in spirituality and health/well-being in order to examine the relationship of spirituality to health outcomes (Levin, Larson & Puchalski, 1997). Through exploration of research studies, the panel concluded that there is a positive correlation between spirituality and health outcomes, and recommended that future research examine the potential benefits of this additional dimension to health (Fetzer, 1999). Thus, a universal language could increase communication across disciplines, resulting in organized empirical progress in research on holistic health.

In turn, a universal language for the holistic model of health could influence health care reform through the cost effectiveness of prevention approaches to health care. The dominant model of health has primarily been remedial, and effective in alleviating only symptoms of chronic and lifestyle illnesses (Seaward, 2001). However, Randall (1996) noted that the new focus of healthcare will become management of cost rather than the maximization of revenue. Further, Randall (1996) described other shifts from specialization to primary care, and from episodic care and a focus on illness to primary care and a focus on quality of life and prevention. Managed care is expected to shift the focus of healthcare so continuity of care is essential and providers are required to function in interdependent, multidisciplinary teams (Randall, 1996).

Many sources suggest that the spiritual dimension and holistic approaches to health are the beginning of the disease chain, and are the source of any enduring health outcomes (Chandler et al., 1992; Hawks et al., 1995; Puchalski & Larson, 1998; Theodore, 1984). For instance, studies of patients completing health programs with spiritual interventions have demonstrated improvements in well-being that resulted in a 60% reduction in medical insurance charges (Miller, Fletcher & Kabat-Zinn, 1995). Yet,

Myers et al. (2000) noted that while 75% of money spent on health care is directed toward chronic disease, only one percent of federal, and two percent of state funding go toward prevention (Myers et al., 2000). Operationalizing the significant factors of holistic health could have an eventual benefit of increasing long-term health changes, and therefore a reduction in health care expenditures.

The benefits of a lexicon for the holistic model of health are interconnected. Improved research will contribute to positive health care reform. According to Capra (1996), our problems are interrelated (e.g., environmental degradation, debts, violence), and the greatest challenge of our time is to create sustainable communities that satisfy our needs without creating harm to future generations. The paradigm shift in physics is part of a larger cultural transformation that requires a figure-ground shift from focusing on objects to a focus on networks of relationships (Capra, 1996). The new paradigm is holistic, where the world is an integrated whole and all phenomena are interconnected (Capra, 1996). “None of the properties of any part of this web is fundamental, they all follow; they all follow from the properties of other parts, and the overall consistency of their interrelatedness determines the structure of the entire web” (Capra, 1996, p. 39).

According to Millar and Hull (1997), reporting on health and wellness affects both program development and political leadership (including funding). Thus, “through the judicious choice of indicators for reporting on human health: wellness, quality of life, and societal values that support health, these relationships can be brought to the attention of the public and political leaderships, and perhaps continued improvement in population health can be realized” (Millar and Hull, 1997, p.158).

### Definition of Key Concepts

**Biopsychosocial Model of Health** is an approach to medicine that incorporates the biological, psychological and social dimensions of the individual. Health is viewed as a more positive condition than with the medical model of health (McKee & Chappel, 1992).

**Biopsychosocial-spiritual Model of Health** was proposed by Hiatt (1986) and Kuhn (1988 as in McKee & Chappel, 1992). An approach to medicine that emphasizes optimal functioning of the body, mind, and spirit (McKee & Chappel, 1992).

**Elementalism** is a perspective that human functioning can be divided into separate parts (e.g., mind, body, and spirit) that function individually and are distinct from the whole. Thus, illness in one component is treated without regard to other components (Westgate, 1996).

**Environmental Model of Health** is the fourth and most expanded model of health to evolve under the World Health Organization. The environmental model introduced the factor of the environment into the definition of health, and described health as a continuing adjustment to and harmony with the environment.

**Health**, according to Miller and Thoresen (1999), is a subjective concept while disease is objective. Thus, Miller and Thorensen noted that “health is better conceived of as a latent construct like personality, character, or happiness” underlying an array of observable phenomena (p. 4). Three domains of health include suffering, functional ability vs. impairment, and coherence or inner peace (Miller & Thoresen, 1999).

In this dissertation, health represents the larger concept of health as it is overarching several fields of health care (i.e., health, wellness, and spirituality). It is also used as one of the individual fields of research that is undergoing a transformation



influenced significantly by the medical field as it shifts from a biomedical model to a more holistic approach.

**Holism** is “an ancient concept of the Near and Far East, in which human functioning is viewed as a synthesized whole, and each component is seen as inextricably interrelated with the other components” (Westgate, 1996, p. 26).

**Holistic Health** is “an approach to the well-being of people that includes the prevention of illness, alternative ways of treating illness, and the means by which good health and full enjoyment of life can be achieved” (Gross, 1980, p. 96). The Greek word *holos* means whole, which refers to more than the sum of its parts (Gross, 1980). Prior definitions of holistic health have addressed the mind, body, and spirit in an effort to treat the whole person. In this dissertation, the lexicon sought for holistic health is one that will evolve from research across fields of study in health, wellness and spirituality in order to incorporate the most current language available to represent whole health. This will potentially include factors such as social and environmental in addition to mind, body, and spirit.

**Holistic model of the World Health Organization** is physical, mental, and social well-being (Larson, 1999).

**Medical/ Biomedical Model of the World Health Organization** was the first, traditional model of health that defines disease as impairment in function and illness as perception of suffering. Measurement is focused on disease and its consequences. The body is likened to a machine and the body and problems are broken into parts (Larson, 1999).

**Psychoneuroimmunology** is the interconnection of the brain, nervous system, and immune system. Also abbreviated as PNI, the term was coined by Dr. Robert Ader in 1981 (Seaward, 2001).

**Religiosity** includes “specific behavioral, social, doctrinal and denominational characteristics because it involves a system of worship and doctrine that is shared within a group” (Fetzer, 1999, p. 2). A narrower term than spirituality that is associated with organized institutions (Westgate, 1996).

**Spirituality**, for the purposes of this dissertation, will be defined as “concerned with the transcendent, addressing ultimate questions about life's meaning, with the assumption that there is more to life than what we see or fully understand” (Fetzer, 1999, p. 2). Spirituality is a broader term than religiosity because it may or may not be expressed publicly (Westgate, 1996). In addition, the field of spirituality will be addressed in much the same way as Miller and Thoresen (1999) who defined spirituality as referring to the multidimensional, part of all people, much like personality or character. It includes domains of practice, spiritual beliefs and spiritual experiences.

**Spiritual Health** is an underlying state of “sound and well-developed spiritual soundness” (Ellison, 1983, p. 16).

**Spiritual Wellness** was defined by Chandler, Holden, and Kolander (1992) as “the innate capacity to, and tendency to, transcend one’s current locus of centrality, which transcendence involves increased knowledge and love” (p. 169).

**Spiritual Well-being** is the experienced expression of an underlying state of spiritual health that is an indicator of a more lasting state of spiritual health (Ellison, 1983).

**Well-being** is “reflective of the positive dimensions of health generally associated with the quest for achieving an optimal state of living” (Vella-Brodrick, 1995, p. 4).

**Wellness**, according to Donatelle, Snow, and Wilcox (1999), is not just about achieving certain components. It involves reaching high levels of all dimensions of wellness. Donatelle et al. (1999) explained that wellness entails taking responsibility for one’s quality of health and actively making healthier choices within each dimension of wellness: mind, body, and spirit.

**Wellness Model of the World Health Organization** includes indicators of high levels of wellness include a movement toward higher functioning and potential that integrates the mind, body, and spirit (Larson, 1999).

**World Health Organization Healthy Cities Movement** is the “aim to create sustainable environments and processes through which governmental and nongovernmental sectors work in partnership to create healthy public policies, achieve high-level participation in community-driven projects, and ultimately, reduce inequities and disparities between groups (Minkler & Wallerstein, 1997, p. 243).

### **Organization of the Study**

This research study is presented in five chapters. Chapter one is an introduction and overview of the research relevant to health, wellness, and spirituality. Chapter two is a review of the related literature, containing outcome studies and literature related to these three constructs. Chapter three presents the methodology for the study. Chapter four presents results of the study. Chapter five is a discussion and summary of the results, limitations of the study, and implications for future health research and practice.

## CHAPTER 2 LITERATURE REVIEW

In this chapter, research literature related to holistic health will be examined. Specifically, research relating to the language used in the three areas of health, wellness, and spirituality will be reviewed. The purpose of this review is to explore the overlap in language across three fields of healthcare that contribute to a lexicon for holistic health. Throughout the review of each field, there will be an examination of the problems that arose in language as each construct was influenced by the paradigmatic shift in science toward holism. This chapter will conclude with a discussion of the interdisciplinary research that already exists and the resulting confusion as the fragmentation of language was integrated.

### **History of Holistic Health**

Since the World Health Organization (WHO) expanded the definition of health beyond an absence of illness and proposed a more holistic one, there have been many efforts to explicate what is meant by the term health. Through these efforts, a lexicon of health has developed that is at once extensive, complex, and confusing. Adding to the complexity and confusion were contributions from the wellness and the holistic health movements.

The definition of health has evolved along a continuum from dichotomous, to multidimensional, and then to holistic (Neuman, 1995). Health was originally defined based on the biomedical model (Brannon & Feist, 1997; Larson, 1999). The biomedical model's definition is a dichotomous one in that it emphasizes the treatment of the

physical body and disease; one is either ill or not ill. A healthy person was described as one who had no illness. However, the WHO's proposal that health is more than an absence of illness, as well as advances in technology, drew attention of health researchers toward well-being rather than illness (Larson, 1999). Because this shift in emphasis was not contained by the dichotomous definition of health, it was expanded to present health as a continuum of illness to wellness.

The biomedical model continued to dominate medicine; yet, alternative models of health emerged that were multidimensional in nature and addressed dimensions of the person beyond the physical. The first of these was psychosomatic medicine. By introducing the notion that disease is influenced by both psychological and physical factors, psychosomatic medicine extended the practice of medicine beyond the biomedical model (Brannon & Feist, 1997). Walter Cannon's explanation of the fight or flight response as a physiological reaction to perceived threat is the foundational piece of research that supports psychosomatic medicine, and prefaced research on the impact of stress and environmental factors on health (Brannon & Feist, 1997). For instance, Hans Selye described how chronic stress can exhaust the physical body/immune system and lead to illness (Seaward, 1996). The significance of this research is that for the first time, illness was conceptualized by a "multiplicity of factors" (Brannon & Feist, 1997, p. 13).

According to Brannon and Feist (1997), those who believed in psychosomatic illness were the first to accept the biopsychosocial model for disease. Introduced by Engel (1980), the biopsychosocial definition extended the psychosomatic model in that it included the social dimension of a person's life as a significant health factor. Thus, the biopsychosocial model provided a multidimensional definition of health. Research

supporting the multidimensional model, including studies on the relaxation response (Benson, 1975), the impact of positive thoughts on cancer (Simonton, Matthews-Simonton & Creighton, 1978) and the healing power of humor (Cousins, 1979), became more evident in the literature.

The multidimensional model of health was further elaborated upon through the wellness movement. Consistent with the WHO's definition of health as more than an absence of illness, the wellness movement went even further than describing positive health, and introduced definitions incorporating optimal health. Granello (2000) called the wellness paradigm a "reevaluation of the biomedical model of health care and the Western philosophical tradition of Cartesian dualism upon which it is based" (p. 3). The wellness movement was consistent with the multidimensional model of health in that it included physical, emotional, social and spiritual dimensions. At the same time, the potential for optimal functioning within each of those dimensions was added to the definition of health. Thus, the wellness movement challenged the definition of health as an illness to absence of illness continuum. Miller and Thoresen (1999) have argued persuasively in favor of this perspective, noting that health is more than a continuum because one could experience wellness in the presence of disease or illness. Thus, it is multidimensional and includes three components of health: function (versus impairment), suffering, and inner peace or coherence.

Implicit in the biopsychosocial and wellness definitions of health was a description of the various dimensions of the individual as being interconnected. Research trends in medicine began to reflect the emerging perspective of health as dynamic and relational. For example, Ader documented the interconnectedness of the body's nervous, endocrine

and immune systems, which provided support for a psychoneuroimmunological model of health (Seaward, 2001). Behavioral medicine, also emerged as an example of a shift in health toward interconnectedness in that it is an interdisciplinary field integrating both behavioral and biomedical science (Brannon & Feist, 1997). This shift toward an acknowledgement of the interconnectedness of systems within the body and between individuals and the environment paralleled a larger shift in society that focused on the relational and nonlinear nature of all social systems.

The interconnectedness theme of the multidimensional model brought attention to the importance of treating the whole person, and gave rise to the holistic health model. At the same time, there was a public demand for healthcare reform that would address the needs of the whole person, including their religious and spiritual beliefs, rather than just isolated parts of the body. The holistic model of health, also called the biopsychosocial-spiritual model (Hiatt, 1986), allowed for the inclusion of the spiritual dimension into the conceptualization of health.

The holistic model was significantly different from traditional, Western approaches. While Western approaches to medicine were effective in dealing with crises in health, they only addressed the symptoms of chronic illness and stress-related illnesses (Seaward, 1996; Wallis, 1996). In contrast, Eastern approaches to healing, which incorporated a spiritual dimension emerged as an alternative way to address the cause of chronic health problems (Wallis, 1996). The evidence that a spiritual dimension could affect recovery from chronic illness further challenged the adequacy of health as either dichotomous or multidimensional. Ellison and Smith (1991) explained, human functioning is a “synthesized whole, and each component is seen as inextricably

interrelated with other components” (p. 26). Thus, the concept that “human functioning can best be understood by studying people as totalities” (Ellison & Smith, 1991, p. 35) became a focus of health researchers and providers.

### **The Need for a Common Lexicon**

The observed changes in the definition of health were consistent with changes that were occurring in all of science. As the perspective of science shifted toward a more relational and nonlinear representation of the world, the definition of health and its related constructs were undergoing changes that also emphasized greater interconnectivity. Despite these shifts, researchers in the area of health, wellness, and spirituality were inconsistent about incorporating the most recent holistic definitions into their work, relying instead on outdated dichotomous, or elementalist, definitions. Elementarism is a reductionist perspective in which human functioning is understood by “analyzing each specific component of human behavior independent from the others” (Ellison & Smith, 1991, p. 35). The need for a common lexicon is based on this inconsistency in language concerning holistic health.

### **Confusion about Definitions**

Many factors contribute to the problem of finding a common language that can be used to guide inquiry into holistic health. One of the most persistent has been the apparent confusion in defining the constructs that are central to the concept of holistic health. While holistic health has been defined as referring to the three factors of mind, body, and spirit, theorists and researchers who frequently write about the importance of health, wellness, and spirituality have shaped the evolution of this movement. The critical issue is the confusion that has resulted as differing definitions of health, wellness, and spirituality have complicated the definition of holistic health. In the next section the



research literature pertaining to the problems of oversimplification and inconsistency in the operationalization of the constructs of holistic health will be described.

## **Health**

Just as the medical model continued to dominate and limit theoretical considerations about health, it also served as the dominant paradigm shaping empirical research (Larson, 1999; Miller & Thoresen, 1999). Specifically, assessment of health in the medical field was limited by the tendency to narrowly define health as illness or absence of illness. This is particularly true for researchers and providers in medical care facilities that primarily assess only the physical domain of health. The medical paradigm fails to include a continuum of optimal functioning. Although instruments emerged that offered an expanded definition of health, a secondary problem surfaced as the number of factors used to capture the definition of health in the medical field became increasingly fragmented.

Examples of focusing only on illness are found in the fact that early instruments used in medical practice and research primarily focused on the assessment of specific diseases (Brazier, Harper, Jones, O'Cathain, Thomas, Usherwood & Westlake, 1992). For example, the Nottingham Health Profile (Hunt, McKenna & McEwen, 1989), a popular measure used in general medical practice assessment, tapped only the extreme end of ill health, and was not suitable to the general population (as in Brazier et al., 1992; Garratt, Ruta, Abdalla, Buckingham & Russell, 1993). In contrast, the Short-Form 36 (SF-36) developed by Ware & Sherbourne (1992) provided a comprehensive measure that was sensitive to a full range of illness and suitable for use with the general population (Brazier et al., 1992). The SF-36 has eight health scales that measure three aspects of health: functional health, well-being, and overall evaluation of health. In a principal

components factor analysis of the instrument, using 1700 chronic pain patients, Garratt, Ruta, Abdalla, Buckingham, and Russell (1993) found that these eight scales captured five factors of health: Physical; Mental and Energy; Role limitations due to physical illness, social, and pain; General health; and Role limitations due to emotional illness. By including assessment of well-being, the SF-36 addressed positive states of health and provided an expansion beyond earlier dichotomous measures of illness or absence of illness.

The DUKE Health Profile (Parkerson, 1999) is another instrument designed to address the need for measures sensitive to positive states of health. The DUKE has eleven scales focusing on both functional (physical mental, social, general, and perceived health) and dysfunctional health (anxiety, depression, anxiety-depression, pain, and disability). However, while the DUKE is similar to the SF-36 in its expansion to include the positive range of health, a factor analysis on the DUKE's eleven scales identified five factors (Physical, Mental, Social, Perceived health, and Disability) of health that were slightly different than the SF-36 (Parkerson, 1999). Thus, within the holistic definition of health came inconsistency in the factors that should be included in health assessment. Further, while the SF-36 and the DUKE improved upon earlier measures by addressing the full continuum of health, both failed to incorporate the most recent domain pertinent to understanding whole health, the spiritual domain.

The wide spread use of the SF-36 and the DUKE Health Profile as measures of health status indicate the medical field's reluctance to incorporate a comprehensive definition of holistic health by failing to address the spiritual dimension of people's lives. Vella-Brodrick and Allen (1995) were the first to document the absence of the spiritual

dimension in most measures of health, and suggested this absence was due to the infancy of research in this holistic health. The claim made by Vella-Brodrick and Allen was corroborated by the findings of Mueller, Plevak & Rummans (2001) who did a meta-analysis of 350 studies of physical health and 850 studies of mental health that were published during the years of 1991-1995 and used religious and spiritual variables. Mueller et al. (2001) reported that religious or spiritual variables were used in only 1.2% of psychiatry studies, "3.5% of family practice studies, 1.1% of internal medicine studies, 11.8% of adolescent health studies, 10% of nursing studies, and 3.6% of gerontology studies" (p. 1226). In an earlier study that examined the use of spiritual variables related to psychological outcomes in over 150 studies of health research, Miller and Thoresen (1999) noted that spirituality was included as a treatment in only 6% of the studies. Thus, evidence of the effectiveness of addressing spirituality in health care has been limited (Miller & Thoresen, 1999).

One effort to address this limitation was attempted by Vella-Brodrick and Allen (1995) who developed the Mental, Physical, Spiritual Well-Being Scale (MPS). The MPS was based on a three factor holistic model of health: mental, physical and spiritual domains. Although Vella-Brodrick (1995) acknowledged that many factors could be included in a holistic health instrument, such as social, cultural, and environmental, only mind, body, and spirit were incorporated into the MPS. Consequently, the MPS captured the missing domain of spirituality, but it did not account for the most comprehensive definition of whole health that was available.

While there are a relatively small number of clinical studies that have addressed the effectiveness of holistic health, a few landmark studies point to the importance of this

approach. The Lifestyle Heart Trial program, designed by Dr. Dean Ornish and colleagues (1990), was a treatment for patients with angina and coronary atherosclerosis that incorporated wellness (e.g., stress management, low-fat vegetarian diet, and moderate exercise) and spiritual (meditation, yoga, and support group) components. In this study, the sample included 48 patients between the ages of 56 and 59, with only five females. Twenty patients were randomly assigned to a standard care control group, while 28 were randomly assigned to an experimental group that received standard care and also participated in the Lifestyle Heart Trial program for one year (Ornish, Brown, Scherwitz, Billings, Armstrong, Ports, McLanahan, Kirkeeide, Brand, Gould, 1990). Ornish et al., (1990) found that the experimental group showed a 91% reduction in frequency of angina and 82% regression of coronary atherosclerosis. Dr. David Spiegel (1993) reported another holistic health study for women with metastatic carcinoma of the breast. The 1993 study was a ten-year follow-up analysis of death records of 83 of the initial 86 women. In the initial study, 36 women received standard care and 50 were randomly assigned to a year-long treatment program of weekly group therapy and self-hypnosis (Spiegel, 1993). Spiegel incorporated spiritual themes such as living as fully as possible, mastering fears, coping with dying, and enhancing support networks (Hawks, Hull, Thalman & Richins, 1995). A proportional hazards survival analysis showed a significant difference between the experimental and control groups in terms of survival time. The experimental group lived 58.4 months beyond first metastasis, and the control group only 43.2 months. Finally, Miller, Fletcher, and Kabat-Zinn (1995) conducted a third landmark study on the maintained effectiveness of an eight week, Mindfulness-Based Stress Reduction program for patients with generalized anxiety disorder and panic disorder. The 1995 study was a

three-year follow-up on 18 of the original participants in the program. Miller and colleagues (1995) emphasized self-awareness and self-acceptance through mindfulness meditation and yoga. A repeated measures analysis of variance compared relevant time points at pre-, post-, and the three-year follow-up using measures of anxiety, depression, and physical symptoms. Matched t-tests confirmed a significant change between pre, post, and follow-up (Miller et al, 1995).

To summarize, health is more than the objective construct portrayed by the biomedical model's focus on disease (Miller and Thoresen, 1999). According to Miller and Thoresen (1999), health is a "latent construct like personality, character, or happiness" (p. 4) that is comprised of several, underlying, observable factors. Thus, health is both complex and multidimensional (Eberst, 1984; Miller and Thoresen, 1999). The findings reported by Ornish et al. (1990), Spiegel (1993), and Miller et al. (1995), suggest that the definition of health has expanded a step beyond multidimensional, and is holistic.

Inconsistencies in definitions of health and the corresponding variability in number of factors, labels for those factors, and definitions had made it difficult to establish a universal language (see Table 2:1). For instance, the SF-36 incorporates a separate subscale for Energy and fatigue, while the DUKE combines energy and fatigue with the Physical subscale. The DUKE was intentionally created to include a distinct Self-Esteem subscale, while this factor is subsumed under Emotional Well-Being on the SF-36. The corresponding label for emotional well-being on the DUKE is called Mental Health even though it captures a similar definition. Vella-Brodrick (1995) also used the term Mental to indicate psychological qualities, yet Vella-Brodrick defined this factor as "the desire to

increase knowledge, to develop an appreciation of aesthetics and to use rational cognitive processes” (p. 12). The Social Functioning scale on the SF-36 refers to how much physical or emotional problems interfered with social activities in the last four weeks, while on the DUKE, Social Health is defined as the participation in social activities and social self-esteem. Spirituality was named as a factor only on the MPS, although it included a definition description of peace with one’s self that also appears under Emotional Well-Being on the SF-36 (specifically, calm and peaceful). Finally, General Health on the SF-36 is defined as perceived health as well as health and wellness compared to others. On the DUKE, Perceived Health is a separate subscale, and General Health is defined as a combination of physical, mental, and social health.

### **Wellness**

As with health, the construct of wellness was influenced by the shift toward holism. Also parallel to health, the shift toward holistic definitions in wellness research literature contributed to complications in arriving at a universal language due to the variable number of factors, labels, and definitions for wellness. Hattie et al. (in press) explained that two commonly used wellness assessments were based on Hettler’s model and were suitable for health care but not the counseling field. One was the Lifestyle Assessment Questionnaire (LAQ), (Elsenrath, Hettler & Leafgren, 1983 as in National Wellness Institute, 2000) that measured six dimensions of health based on Hettler’s model (i.e., physical, occupational, emotional, intellectual, spiritual, and social development. The physical scale was further broken into exercise, nutrition, self-care, vehicle safety, and drug usage, and the emotional scale was broken into subscales of emotional awareness, acceptance, and emotional management (National Wellness

Institute, 1983). The second was Testwell (NWI, 1988), which measured the same six dimensions of Hettler's model. While these early wellness assessments incorporated spirituality, Hattie et al. (in press) noted the need for instruments that captured the developmental and psychological qualities of wellness across the life-span.

The Wellness Evaluation of Lifestyle (WEL) was subsequently developed by Hattie et al. (in press) to provide an empirical assessment of the Wheel of Wellness model. In constructing the WEL, Hattie et al. (in press) included Witmer and Sweeney's (1992) 17 factors of wellness but reorganized and validated the subscales in order to identify the most pertinent items for measuring wellness. Having passed through five revisions, the WEL-J provides the most comprehensive instrument for measuring wellness and defines 17 factors that are grouped into five major scales: Existential Self (Spirituality, Self-care, gender identification, and cultural identity), Social Self (Friendship and Love), Interactive Self (Intelligence, Humor, Control, Work, Emotional Awareness), Intraactive Self (Realistic Beliefs, Leisure, Stress Management, Sense of Worth), and Physical Self (Exercise and Nutrition).

Another wellness instrument, the Health Promoting Life-Style Profile II (HPLPII; Walker, Sechrist & Pender, 1987), identified a different combination of six scales: spiritual growth behaviors, health responsibility, physical activity, nutrition, interpersonal relations, and stress management. While the HPLP resembled the dimensions described by the WEL, it did not address the psychological and developmental components that Hattie et al. (in press) believed to be significant to a holistic assessment of wellness.

A third measure of wellness found in the literature is the Perceived Wellness Survey (PWS) (Adams, Bezner & Steinhardt, 1997). Adams et al. (1997) argued that the

objective measures of health that are commonly used as wellness indicators in research, do not capture spiritual or psychological wellness. According to Adams et al. (1997), perceived wellness is a multidimensional, salutogenic [health causing] construct” (p. 209), yet in measurement of wellness, the tendency is to select physical measures, such as blood pressure, that give a disease focus to the research. Consequently, wellness research is often “mislabelled as health promotion instead of disease prevention research” (Adams et al., 1997, p. 209). Further, perceptions of wellness would precede physical responses and behaviors, and thus provide a valid indicator of objective health (Adams et al., 2000). Thus, the PWS was created to provide a multidimensional measure of perceived wellness that includes six dimensions (physical, social, psychological, intellectual, emotional, and spiritual), each of which is represented as a scale on the PWS. Like Vella-Brodrick (1995) in health, Adams et al. (1997), identified other factors that have been introduced as part of the expansion in the definition of wellness, including some overlap between language that Vella-Brodrick proposed for holistic health. Adams et al. (1997) noted that cultural, organizational, and environmental should be part of future models of wellness although they were not included in the PWS.

As multidimensional and holistic definitions of wellness emerged, there were inconsistencies in language across models and instruments just as with health (see Table 2:2). For instance, Interpersonal Support on the HPLP II was defined as intimacy and closeness with others. On the PWS, interpersonal relations are included under the label Social and make additional reference to family. On the WEL, these concepts are separated under the labels of Friendship (referring to social relationships without marital, familial, or sexual commitment) and Love (referring to long-term intimacy and



commitment). Sense of Purpose is a distinct factor on the WEL and PWS, while it is included in the definition of the label Spiritual growth behaviors on the HPLP II. Health Responsibility on the HPLP II was a factor defined with general health practices and use of the health care system, acceptance of responsibility for one's own health. This definition was labeled Self-Care on the WEL. Stress Management on the HPLP II was defined by sleep and stress management. On the WEL, the label Stress Management also included an ability to identify and reduce stressors, assertiveness, and communication skills. The closest definition for this factor on the PWS was a factor labeled Emotional that included confidence, positive expectations and optimism. The WEL was much more detailed and identified distinct factors for various parts of psychological or emotional traits (e.g., Realistic Beliefs, Sense of Worth, Self-Direction which included stress resistant personality, Emotional Awareness and Coping which included positively managing emotions, and Sense of Control which was an internal locus of control). Finally, the PWS has an Intellectual factor that is described by mental stimulation. Alternatively, the WEL uses a label called Work to refer to satisfaction and feelings of competence at work, and also a label called Problem Solving and Creativity that is defined by intellectual stimulation, the need to learn, and a sense of wonder and curiosity.

In sum, there are obvious differences among researchers about the definition of wellness and the number of factors that are comprehended by each definition. Further, efforts to operationalize the various definitions led to the creation of a variety of instruments that purport to assess some representation of wellness and contributed to the confusion. There is a need for a clear language that would capture the most

comprehensive definition of wellness and provide consistency in the number of factors that would characterize such a definition.

### **Spirituality**

As with health and wellness, the field of spirituality, too had difficulty in the shift toward more holistic approaches to operationalizing the construct of spirituality. Once again, the consequences of fragmented models and research were inconsistencies in the number, labels, and definitions for factors comprising the construct of spirituality (see Appendix D). MacDonald et al. (1995) described efforts in new instruments to correct for the oversimplified definition of spirituality from a Judeo-Christian or monotheistic perspective. For instance, the Spiritual Assessment Scale (SAS; Howden, 1992 as in MacDonald et al., 1995) created for use in nursing research identified four scales that do not rely upon religious theory or terminology, including: Unifying Interconnectedness, Purpose and Meaning in Life, Innerness or Inner Resources, and Transcendence. The four factors were identified in a principal components analysis on a sample of 189 adults who were between 40 and 60 years old. Another instrument, the Spiritual Orientation Inventory (SOI; Elkins, Hedstrom, Hughes, Leaf & Saunders, 1988) was developed based on a review of humanistic literature in an effort to measure spirituality of those not affiliated with traditional religion (Elkins et al., 1988). The SOI identified nine dimensions of spirituality: Transcendent Dimension; Meaning and purpose in life; Mission in life; Sacredness of Life; Material Values; Altruism; Idealism; Awareness of the Tragic; and Fruits of Spirituality. MacDonald et al. (1999b) called the Psychomatrix Spirituality Inventory (Wolman, 1997) a promising “grassroots” approach toward an alternative operationalization of spirituality (p. 165). The PSI was developed to measure what spirituality means in America today. Using conversations with clergy, scholars,

focus groups, and colleagues, Wolman (1997) developed 105 statements on activities, behaviors and thoughts associated with spirituality. From the statements, Wolman (1997) identified seven categories of spiritual experiences: Awareness of a transcendent source; Spiritual activities or practices; Use of healing practices; Experience of physical and emotional trauma; Body awareness; Religious history; and Current religious practices (Wolman, 1997).

Hatch et al. (1998) developed the Spiritual Inventory and Belief Scale (SIBS) as a measure of spirituality that would correct for the earlier problems of religious terminology. Using a sample of 304 subjects, including medical students and a diverse group of elderly, and data from another study of 150 nursing students, Hatch (2000) conducted a factor analysis of a 39-item revised version of the SIBS. The factor analysis identified four dimensions of spirituality: Core Spirituality (connection, meaning, faith, involvement, and experience); Spiritual perspective/existential; Personal application/humility; Acceptance/insight (insight into the futility of focusing attention on things that can be changed). There was some overlap between the last two factors. The SIBS-R was eventually shortened to the best 22 items, and another factor analysis confirmed the former 4 factors (Hatch 2000).

In an effort to establish some consensus about the elements of the spiritual domain, Ingersoll (1998) conducted a delphi study to determine universal themes of spirituality that would cut across cultural traditions based on the feedback of twelve leaders from eleven different cultural traditions. Ingersoll (1998) identified ten dimensions of spirituality ranked in order from highest agreement to lowest: Knowledge-learning;

Connectedness; Conception of the absolute or divine; Meaning; Forgiveness; Hope; Experience-ritual; Present-centeredness; Sense of freedom; Mystery.

MacDonald (1997) also sought to find a common factor structure for the spiritual domain. In a review of over 70 instruments measuring spiritual constructs, MacDonald found that there was no way to organize the constructs due to differences in how the term spirituality was operationalized (MacDonald, 1997). In response, MacDonald (1997) conducted a two-stage factor analytic study on over 18 measures of spirituality and related constructs, using over 1400 undergraduate students. Five factors emerged from the analyses: Cognitive Orientation toward Spirituality (nontheistic), Experiential/Phenomenological Dimension, Existential well-being, Paranormal, and Religiousness.

Based on the efforts of a national working group under the Fetzer Institute and the National Institute on Aging, the Fetzer Institute found that 12 areas of spirituality had empirical connections to health outcome, and thus, concluded that spirituality is a complex construct. The factors included: daily spiritual experiences, meaning, values, beliefs, forgiveness, private religious practices, religious/spiritual coping, religious support, religious/spiritual history, commitment, organizational religiousness, and religious preference. In an effort to contribute to understanding of the complexity of this new domain of health, the Fetzer Institute (1999) produced a report called the Multidimensional Measurement of Religiousness/ Spirituality for Use in Health Research. The report provided valid items for assessing each factor of spirituality relevant to health. According to the results of the working group these factors are not to be considered a full representation of all the dimensions of religiousness/spirituality. Future

research was called for which could further explore spiritual factors related to health outcomes, and contribute toward instrument development for those domains.

Just as with health and wellness, the language across models and instruments has included inconsistent use of labels and language in definitions (see Table 2:3). For instance, variations of the theme of transcendence have included: Transcendence: ability to go beyond usual physical or psychic experiences (SAS); Transcendent Dimension (“experientially based belief that there is a transcendent dimension” (SOI) (p. 185); Conception of the Absolute or Divine (Ingersoll, 1998); and Awareness of Transcendent Source (PSI). Inner strength was another concept that had varying labels and definitions. The SAS used the label Innerness to refer to peace with self, identity, empowerment, and strength in crises. The SIBS used the label Acceptance/Insight to refer to an insight into the futility of focusing attention on things that cannot be changed. Other variations of inner strength included: Core Spirituality (meaning, faith) (SIBS); Meaning and Purpose in Life (one exists for a purpose) (SOI); or Hope (faith to endure and suffering that is not in vain) (Ingersoll, 1998). Variations of how one applies spirituality in daily life have included: Fruits of Spirituality (a discernable effect) (SOI); Experience-ritual (proactive rather than passive experiences) (Ingersoll, 1998); Altruism (motivation to help others) (SOI); Idealism (committed to improving the world) (SOI); Core Spirituality (involvement) (SIBS); Personal Application/ Humility (SIBS); Daily Spiritual Experiences (Fetzer); Experiential/ Phenomenological Dimension (ESI); and Commitment (affect on values and behavior) (Fetzer, 1999). Finally, a theme of connectedness appears with various labels and slightly different language in the definitions: Unifying Interconnectedness (oneness with universe) (SAS); Present-

centeredness (harmony with the truth and present moment) (Ingersoll, 1998); and Connectedness (with others, environment, community) (Ingersoll, 1998). Meaning and purpose in life have been called Meaning (Ingersoll, 1998); Mission in Life (SOI); Meaning and Purpose (SOI); Existential Well-being (Fetzer, 1999); and Core Spirituality (meaning) (SIBS); Spiritual Perspective/Existential (SIBS).

To summarize, recent efforts to explicate spirituality have identified a range of four to twelve dimensions. This inconsistency has not only contributed to confusion about a common language for the spiritual domain, but also reflects the confusion as definitions of health and wellness have expanded. In particular, this complexity is compounded within interdisciplinary research that includes all of these constructs (health, wellness, and spirituality).

### **Interdisciplinary Research**

The lack of a common language that adequately expresses the holistic nature of health poses a problem for health-related professions who seek to identify critical elements in health. As a result of inconsistent definitions and indicators selected for assessment, conclusions of interdisciplinary studies have been fragmented and failed to build upon each other (see Appendices E and F). This limitation has made it difficult to establish key elements of optimal health, and contributed to the confusion about the relationships among constructs of health, wellness, and spirituality. For instance, where are the boundaries to each construct and where is there overlap? A review of the literature yielded four studies that provided examples of this problem as they compared multiple dimensions of health.

Using Neuman's Systems Model of Health (1995), Buck (1996) examined the importance of five dimensions to wellness, and their relative importance to perceived

health. Buck (1996) equated health and wellness without commenting on the obvious differences that have emerged in defining these terms. Buck (1996) collected data from a convenience sample of 233 adults for each of the five dimensions using these scales: Physical (SF-36); Psychological well-being (General Well-Being Scale); Developmental (psychosocial maturity: MEPSI); Sociocultural (Family functioning: FACES II); Spiritual (Spiritual experiences: INSPIRIT); and Spiritual well-being (SWBS). Using a variety of data analyses, a number of significant findings were observed. For example, cluster and discriminant analyses validated the significance of the five dimensions of health proposed by Neuman. A one-way ANOVA of the five clusters showed that the clusters were significantly different in perceived overall health, and individuals above the mean on all dimensions reported the highest perceived overall health. This suggested that wellness is indeed optimal functioning in all dimensions (Buck, 1996). Individuals below the mean on any one dimension reported lower overall health, but could not be characterized by any one dimension. Although, core spiritual experiences played a significant, independent role in overall health, two hierarchical regression analyses on two measures of spirituality (INSPIRIT and SWBS) revealed that spirituality did not mediate the effect of other dimensions on overall perceived health. Specifically, when physical and psychological health were high, low spirituality was not relevant. When spirituality was high, it did not counterbalance the effects of low physical and psychological health.

In a second study that examined multiple dimensions of wellness, Hattie et al. (in press) used a composite sample from five studies that included convenience samples of undergraduate and graduate students, older persons in Elderhostel programs, mental health clinic outpatients, professional counselors, mid-level corporate managers, and high

school students to examine the validity of the Wellness Evaluation of Lifestyle (WEL). A maximum-likelihood exploratory factor analysis specified five second-order factors of wellness: a) Existential Self, b) Social Self, c) Interactive Self, d) Physical Self, e) Intra-active Self. These five second-order factors included 17 first order factors: a) Existential Self (Spirituality, Self care, gender identification, cultural identity); b) Social Self (friendship and love); c) Interactive Self (realistic beliefs, leisure, stress management, and sense of worth); d) Physical (exercise and nutrition); and e) Intra-active Self (intellectual stimulation, sense of control, sense of humor, work, and emotional awareness). Further, Hattie et al. (in press) found that these five second-order factors loaded onto a single third-order factor that was labeled wellness. Hattie et al. (1998) then conducted a goodness of fit test and found that this third-order factor, wellness, was best referenced by Interactive and Intra-active dimensions, and least by the Physical dimension. All five second-order factors contributed significantly to overall wellness.

A third interdisciplinary study that combined multiple dimensions of health was Ornish's (1991) research on his Life-style Heart Trial program. Ornish randomly assigned 48 patients who had recently undergone a coronary angiography to an experimental group that received a psychosocial intervention or a control group that received conventional follow-up care. The experimental group attended a nine day retreat that introduced comprehensive life-style changes such as a low-fat vegetarian diet, instructions for restricting alcohol and excluding caffeine, lectures on nutrition and cooking, individualized exercise programs, and a stress management component including meditation and yoga. The subjects assigned to the experimental group attended a follow-up program twice a week for a year to reinforce the components of the retreat,



and followed the diet, exercise, and stress management directives in between. All but one subject in the experimental group followed the program successfully. The control group received standard physician instructions on diet, exercise, smoking, and stress. At the end of the year, 82% of the experimental group showed regression of coronary atherosclerosis, and 53% of the control group had progression of atherosclerosis. Ornish (1991) concluded that adherence to each component of the intervention correlated with change, while factors such as age, disease severity, and change in risk factors did not correlate with change in atherosclerosis. Hawks et al. (1995) reviewed Ornish's study and noted that the premise of the life-style heart trial program is that "the earlier you intervene in the multicausal chain of illness, the more beneficial the effects" (p. 373). Thus, emotional and spiritual well-being were described as the beginning of the disease chain because they contribute to development of negative health behaviors (Hawks, et al., 1995).

In a fourth interdisciplinary study, Deay (1995) investigated multiple predictors of cancer and coronary heart disease for the purpose of determining which predictors had the strongest influence. Deay (1995) used a sample of 72 volunteers that were part of a corporate sponsored wellness program over three years. Spiritual Well-Being was measured using the Spiritual Well-Being Scale, Heart Disease risk with the CHD Risk Factor Score Sheets, Cancer risk with the Hales Risk Factors for cancer Self-Survey Scale, and Personality traits with the Matticek and Eysenck rationality/anti-rationality rating scale. A regression analysis revealed that spiritual well-being was a significant predictor of cancer risk factor, but not coronary heart disease (CHD). Age was a

significant predictor of CHD, while personality type was not a significant predictor of either cancer risk or CHD risk.

The problem in comparing these contradictory conclusions lies in the lack of a common language. For instance, three of the studies (Buck, Hattie et al., and Ornish) use variables that identify a psychological or emotional dimension with language such as sense of control, stress management, emotional awareness, and realistic beliefs. In contrast, Deay (1995) used the label of personality type, which is considered to be a composite of a person's psychological and emotional make-up. The former three studies (Buck, 1996; Hattie et al., in press; Ornish, 1991) concluded that the psychological or emotional dimension is significant to health or wellness. However, Deay (1995) concluded that personality type was not a significant predictor of certain health risks. It is difficult to draw conclusions about key indicators of health from these studies because each addresses a slightly different variation of the psychological dimension.

A parallel problem exists when the physical dimension of health is considered. Across four interdisciplinary studies, different aspects of the physical dimension were investigated. For instance, Hattie et al. (in press) examined scales defining the physical as exercise and nutrition. Buck (1996) used a definition of functional ability in daily life. Deay (1995) measured self-reported indicators of cancer or CHD risk, and Ornish (1991) assessed objective health indicators (e.g. atherosclerosis). The result of this inconsistent language was contradictory conclusions about the significance of the physical dimension to overall health. Buck (1996) concluded that the physical and psychological dimensions were the strongest in importance to overall perceived health, or wellness. This conclusion is in contrast to that of Hattie et al. (in press) who found that the physical dimension

referenced wellness the least. Further, Ornish (1991) identified certain dimensions as preceding physical health behaviors.

Finally, definitions of the spiritual dimension varied across all four interdisciplinary studies and contributed to the problem of contradictory conclusions about the importance of the spiritual dimension to health. Buck (1996) defined spirituality using the SWBS (religious and existential well-being) and the Inspirit (core spiritual experiences). Results indicated that low spirituality was not relevant when the physical and psychological health were high, and high spirituality could not counterbalance the effects of low physical and psychological health. Yet, Ornish's (1991) spiritual component included a broader definition (e.g., yoga, meditation, and imagery) and was considered more influential, when combined with emotional factors, than conventional care that only incorporated physical factors. Deay (1995) used the same definition of spirituality as Buck (1996) but found that spiritual well-being was a significant predictor of cancer risk. While Buck (1996) and Deay (1995) reached different conclusions about the importance of spirituality to health, they also used different indicators of physical health (e.g., self-report versus objective indicators) as described above.

### **Proposed Study**

One proposed solution to the problem of fragmented and inconsistent language is the development of a common lexicon for holistic health. This study represents an initial step toward that goal. In this study, an exploratory factor analysis will be used to identify a lexicon that can be used across disciplines, promoting communication about holistic health. The factor analysis first will be used to consolidate factors with overlap, as well as to identify boundaries between distinctly different definitions. Next, results of the factor analysis will be used to identify those factors that most strongly represent the construct of

holistic health. By clarifying a common, interdisciplinary language, the research literature can then begin to move toward developing instruments specific to the assessment of holistic health, and to identify those indicators of health that relate most closely to positive health outcomes.

Most research to date that relates to holistic health has primarily focused on mind, body, and spirit constructs. While this definition is appropriate in representing the three primary domains of the individual that are unique to holistic definitions of health, it is not as useful in guiding selection of instruments or variables for research studies that want to comprehensively address holistic health. The paradigmatic shift in science toward holism has contributed to a much more complex conceptualization of holistic health; one that incorporates interactions with the environment (e.g., family, community, interpersonal skills, stress management), as well as expanded conceptualizations of health, wellness, and spirituality. Whereas, elementalist definitions were valuable in introducing these areas to the definition of health, more recent and holistic definitions have added to the options and variations available for defining holistic health. In a paper addressing the conceptualization of health, Larson (1999) described the growing complexity as four models of health have emerged under the World Health Organization (medical, holistic, wellness, and environmental). Larson (1999) proposed that future definitions of health would incorporate parts of each model that has been a part of the history of conceptualizing health. It is significant to note that the definitions of those four models do not exactly parallel their label, in that the holistic model included only a social dimension and the environmental model more closely resembles current descriptions in this paper of holistic health. Larson's model serves to illustrate the importance of

conceptualizing holistic health through earlier models, rather than through elementalist definitions that focus on separate parts of the individual. Therefore, in an effort to acknowledge the complexity of holistic health, three fields that have marked the transformation in the definition of holistic health were selected for study.

This study will be an exploratory factor analysis using two instruments each, from health, wellness, and spirituality. Instruments within each area that reflect expanded and more holistic definitions were selected for use. In the area of health, the RAND 36-item Health Survey (Hays, Sherbourne & Mazel, 1993) and the DUKE Health Profile (Parkerson, 1999) will be used. The RAND is a quality of life questionnaire with eight scales that tap health perception, and the DUKE is a 17-item measure of functional health, or health-related quality of life. To assess wellness, the Wellness Evaluation of Lifestyle (WEL-J) (Hattie, Myers & Sweeney, in press) and the Perceived Wellness Survey (PWS) (Adams, Bezner & Steinhardt, 1997) were selected. The WEL measures five life tasks associated with wellness, and the PWS is a self-report measure of perceived wellness that measures six dimensions of wellness. In the area of spirituality, the Spiritual Inventory and Beliefs Scale (SIBS-R) (Hatch, Burg, Naberhaus & Hellmich, 1998) and the Expressions of Spirituality Inventory (MacDonald, 1997) were selected. The SIBS-R is a measure of spirituality designed to use a universal definition of spirituality and be appropriate for understanding the spiritual dimension of patients. The ESI is a self-report instrument that measures five dimensions of the expressions of spirituality.

### **Summary**

This chapter has reviewed the research literature related to the evolution of three fields that have shaped the definition of holistic health: health, wellness, and spirituality.

Under the influence of a larger paradigmatic shift in science from elementalism toward holism, each of these constructs has become increasingly complex and relational. In so doing, research studies and measures have been plagued with problems that have made it difficult to arrive at a common lexicon for holistic health. One problem that was described was the tendency of researchers within health, wellness, and spirituality to continue to rely upon elementalist definitions. Another problem explored was the fragmented number of factors, labels and definitions when efforts were made in the research to incorporate multidimensional and holistic definitions. Finally, the last problem reviewed was the inconsistency in conclusions within interdisciplinary studies that used two or more of the changing fields of health, wellness, and spirituality. A need for a common lexicon for holistic health was identified. Such a lexicon would allow for communication across disciplines, and the ability of researchers to build upon prior studies. This interdisciplinary research and communication was described in chapter one as the path of the future for all of science. For this study, a factor analysis of the three fields of health, wellness, and spirituality was proposed as a solution for identifying a common language toward a lexicon for holistic health.

Table 2-1. Inconsistencies in Health Subscales

Instrument	Number of Factors	Focus	Labels for Scales
Neuman's Systems Model of Health (Neuman, 1989)	5 Dimensions	A holistic model of health	5: Physical; Psychological Well-being; Developmental; Sociocultural; Spiritual
Short-Form 36 (Ware & Sherbourne, 1992)	5 Factors: Physical; Mental and Energy; Role limitations due to physical illness, social and pain; General health; and Role limitations due to emotional illness	A primary care instrument that taps health perception and is suitable for the general population.	8 scales: physical; mental; energy; role limitations due to physical; social; pain; general health; role limitations due to emotional illness
		Measures 3 aspects of health: functional health, well-being, and overall evaluation of health	
DUKE Health Profile (Parkerson, 1999)	5 Factors: Physical, Mental, Social, Perceived health; and Disability	Measure of functional health, or health-related quality of life.	11 scales: 6 measure functional health (physical; mental; social; general; perceived health; and self-esteem). 5 measure dysfunctional health (anxiety; depression; anxiety-depression; pain; disability)
Mental, Physical, Spiritual Well-Being Scale (MPS) (Vella-Brodrick, 1995)	3 Factors: Physical, Mental; Spiritual	Measure of holistic health	3 scales: physical; mental; and spiritual

Table 2-2. Inconsistencies in Wellness Subscales

Instrument	# of Factors	Focus	Labels for Subscales
Lifestyle Assessment Questionnaire (LAQ) (National Wellness Institute, 2000)	10 scales	Measure of wellness	10 scales: exercise; nutrition; self-care; vehicle safety; drug usage, environmental awareness, emotional management, intellectual wellness, occupational wellness, and spiritual wellness
Testwell (National Wellness Institute, 2000)	12 scales	Measure of wellness	12 scales: physical fitness and nutrition; medical self-care; safety; social awareness; environmental wellness; sexuality; emotional awareness; emotional management; occupational wellness; intellectual wellness; spirituality; values
Wellness Evaluation of Lifestyle (WEL) Hattie et al. (in press)	5 Factors: Existential Self; Social Self; Interactive Self; Intraactive Self; Physical Self	Holistic Wellness	17 scales: Spirituality; Self-care; Gender identification; Cultural identity (Existential self); Friendship; Love (Social Self); Intelligence; Humor; Control; Work; Emotional Awareness (Interactive Self); Realistic Beliefs; Leisure; Stress Management; Sense of Worth (Intraactive Self); Exercise; Nutrition (Physical Self)
Health Promoting Life-Style Profile II (HPLP II) (Walker, Sechrist & Pender, 1987)	6 scales	Wellness and health-promoting life-styles	6 scales: spiritual growth; health responsibility; physical activity; nutrition; interpersonal relations, and stress management.
Perceived Wellness Survey (PWS) (Adams, Bezner & Steinhardt, 1997)	6 scales	Multi-dimensional measure of perceived wellness	6 scales: physical; social; psychological; intellectual; emotional; spiritual



Table 2-3. Inconsistencies in Spirituality Subscales

Instrument	# of Factors	Focus	Labels for Subscales
Spiritual Assessment Scale (Howden, 1992 as in MacDonald et al., 1995)	4 Factors	An instrument designed for use in nursing research to measure spirituality without relying upon religious theory or terminology	4 scales: Unifying Interconnectedness; Purpose and Meaning in Life; Innerness or Inner Resources; Transcendence
Spiritual Orientation Inventory (SOI) (Elkins, Hedstrom, Hughes, Leaf & Saunders, 1988)	9 dimensions of spirituality from literature review	Based on humanistic model to measure spirituality of those not affiliated with traditional religion	9 scales: transcendent dimension; meaning and purpose in life; mission in life; sacredness of life; material values; altruism; idealism; awareness of the tragic; fruits of spirituality
Psychomatrix Spirituality Inventory (PSI) (Wolman, 1997)	7 categories of spiritual experiences	Measures what spirituality means in America today	7 scales: awareness of transcendent source; spiritual activities or practices; use of healing practices; experience of physical or emotional trauma; body awareness; religious history; current religious practices
Spiritual Inventory and Belief Scale-Revised (SIBS-R) (Hatch, 2000)	4 factors	Measure of spirituality to correct for problems with religious terminology and for use in medical field	4 scales: core spirituality; spiritual perspective/ existential; personal application/ humility; acceptance/ insight
Delphi Study of Spirituality (Ingersoll, 1998)	10 dimensions of spirituality	Consensus of spirituality across religious traditions (a cross-cultural definition)	10: Knowledge-Learning; Connectedness; Conception of Divine; Meaning; Forgiveness; Hope; Experience-ritual; Present-centeredness; Sense of Freedom; Mystery

Table 2-3. Continued

Instrument	# of Factors	Focus	Labels for Subscales
Expressions of Spirituality Inventory (ESI) (MacDonald, 1997)	5 Factors: Cognitive Orientation toward Spirituality (nontheistic); Experiential; Phenomenological Dimension; Existential Well-being; Paranormal; Religiousness.	Common factor structure for instrument of spirituality	5 scales: Cognitive Orientation toward Spirituality (nontheistic); Experiential; Phenomenological Dimension; Existential Well-being; Paranormal; Religiousness.
National Institute of Healthcare Research panel (Fetzer, 1999)	10 domains	10 domains of spirituality with links to health outcome	10: Religious/ Spiritual Experiences; Religious/ Spiritual Values; Religious/ Spiritual Motivation for Regulating and Reconciling Relationships; Religious/ Spiritual Coping; Religious/ Spiritual Support; Religious/ Spiritual Commitment; Religious/ Spiritual Preference or Affiliation; Religious/ Spiritual Private Practices; Religious/ Spiritual History

## CHAPTER 3 METHODOLOGY

The purpose of this study was to identify a common language toward a lexicon for holistic health. Toward this end, an exploratory factor analysis of the three areas of health, wellness, and spirituality was conducted. In this chapter, the research question, population, sampling procedures, data collection, and data analytic procedures are described. In addition, the instrumentation and limits of the study are discussed.

### **Population**

The research population consisted of the undergraduate, college student body at the University of Florida, a large university in the Southeast. Research participants were selected from four undergraduate electives in the college of education, as well as from a pool of research volunteers from the psychology department. Approximately 750 participants were surveyed.

### **Sampling Procedure**

The research sample was drawn from four undergraduate, elective courses in the College of Education: stress management, interpersonal communication skills, career development, and drug and alcohol awareness. Instructors offered extra credit to students willing to participate in this study; although, students had the option to complete other assignments or research for extra credit. In addition, the research sample was also drawn from a large pool of undergraduates in the Department of Psychology that volunteer to participate in research studies as part of their course credit.

Students were first given an informed consent document (see Appendix B) that described the potential risks and benefits of participation. An emphasis was placed on the confidentiality of the study, and participants were informed that they had no obligation to participate. Due to the time required to complete all six instruments and the demographic sheet (approximately 60 minutes), a series of administrations times and places outside of class were distributed. The research packets were administered by the primary investigator and trained research assistants for consistency in delivery of instructions.

### **Data Collection**

Data collection consisted of participants completing a research packet with a demographic page and six surveys. The six surveys included two health measures (RAND 36-item Health Survey, DUKE Health Profile), two wellness measures (Wellness Evaluation of Lifestyle, Perceived Wellness Survey), and two spirituality measures (Spiritual Inventory and Beliefs Scale, Expressions of Spirituality Inventory). Upon arriving at the administration location, each participant received a packet with a code number in the upper right of the packet. The code number served to identify each packet for purposes of data analysis while protecting the confidentiality of each participant.

### **Instrumentation**

#### **The DUKE Health Profile**

The Duke Health Profile (DUKE) is a 17-item measure of functional health, or health-related quality of life (Parkerson, 1999). It has eleven subscales. Six subscales provide measures of functional health (Physical, Mental, Social, General, Perceived Health, and Self-Esteem), and five subscales provide measures of dysfunctional health (Anxiety, Depression, Anxiety-Depression or DUKE-AD, Pain, and Disability) (Parkerson, 1999). The DUKE is based on an earlier instrument -- the Duke-University of

North Carolina Health Profile (DUHP) that was designed as a quality of life indicator for use by primary care providers. Although the DUHP stood the test of time as an instrument that clearly provided information about functional health status, it had some limitations and the DUKE was developed to overcome its problems (Parkerson, 1999). For example, the number of scales was expanded to include dysfunction, the number of items were reduced to provide a shorter measure for the primary care provider, and emotional function was expanded to include more indicators (Parkerson, 1999). However, most of the items of the DUHP were left unchanged.

The DUKE was conceptually and clinically driven. For instance, it was developed from the DUHP, which was conceptually based upon the World Health Organization's (WHO) definition of functional health. The WHO definition expanded the understanding of health to include separate health dimensions of physical, mental and social health (Parkerson, 1999). Thus, the DUKE had a holistic approach to health and well-being. In comparison to a comparable quality of life measure, the Short-Form 36, Parkerson (1999) noted that the DUKE measures physical health, while the SF-36 measures physical functioning. The DUKE was both clinically driven based upon successful use of the DUHP in the medical care setting.

Since the DUKE was developed for a primary healthcare setting, it was designed to take approximately 5 minutes to complete. There are 3 response options per item. Parts of the instrument have response options ranging from none to a lot. Other segments of the instrument have options ranging from yes, describes me exactly to no, doesn't describe me at all. One question about dysfunction has response options based on number of days. Scoring is done by hand or with a computer. Single-item scales are scored by

transforming the raw score of 0-2, to a 100-point scale of 0, 50, 100. Multi-item scores are the mean of the transformed scores on the 100-point scale (Parkerson, 1999).

The DUKE provides 6 subscales that indicate functional health (Physical, Mental, Social, General, Perceived, and Self-Esteem). The Physical Health subscale contains 5 items; measuring “physical capacity for ambulation with two items (walking, running) and physical symptoms with three items (sleeping, fatigue, pain)” (Parkerson, 1999, p. 10). In the Mental Health subscale, there are 5 items. It “measures psychological symptoms with two items (depressed feelings, nervousness), cognition with one item (concentrating), and personal self-esteem with two items (like who I am, give up too easily)” (Parkerson, 1999, p. 10-11). The Social Health subscale contains 5 items; measuring “participation in social activities with two items (socialize with friends or relatives, participate in group activities), and social self-esteem with three items (not easy to get along with, comfortable around people, happy with family relationships)” (Parkerson, 1999, p. 11). General Health is a subscale containing 15 items representing overall health. The General Health score is obtained by averaging the scores for the physical, mental and social health subscales. Perceived Health is measured with only 1 item that refers to the patient’s self-assessment of general health. The Self-Esteem subscale contains 5 items, and “measures personal self-esteem with two items (like who I am, give up too easily) and social self-esteem with three items (not easy to get along with, comfortable around people, happy with family relationships)” (Parkerson, 1999, p. 11).

Five subscales measure dysfunction in health status on the DUKE. The Anxiety subscale has six items, with three measuring social self-esteem, one item about

nervousness, and two items for somatic symptoms. Depression is the next subscale and contains 5 items. Two items measure personal self-esteem, one item measures depressed feelings, and two items for somatic symptoms. The Anxiety-Depression (AD) is a 7-item subscale measuring both anxiety and depression. Items on the AD are combined from the depression scale and the anxiety scale. The Pain subscale contains one item that measure hurting or aching. Finally, the Disability subscale uses one item to measure confinement during the preceding week (e.g., in a home or hospital due to “sickness, injury, or other health problem” [Parkerson, 1999, p. 11]).

Parkerson (1999) reported reliability estimates based on ten independent studies. Five of the studies used primary care patients as participants (N=683 Parkerson, G.R., Broadhead, W.E., & Tse C-K.J., 1990; N=314 Parkerson, G.R., Broadhead, W.E., Tse C-K.J., 1992; N=413 Parkerson et al., 1993 unpublished data; N=1916 Parkerson et al., 1994 unpublished data; N=1997 Parkerson, et al., 1999 unpublished data as in Parkerson, 1999). Of the remaining five samples, two included patients with erectile dysfunction (N=490 Parkerson, G.R., Willke, R.J., & Hays, R.D., 1999; N=583, Parkerson, G.R., Willke, R.J., & Hays, R.D., 1999 as in Parkerson, 1999), one with musculoskeletal disorders (N=49 Beaton, D.E., Hogg-Johnson, S., Bombardier, C., 1997 as in Parkerson, 1999), one with insulin-dependent diabetic patients (N=170 Parkerson, G.R., Connis, R.T., Broadhead, W.E., Patrick, D.L., Taylor, T.R., Tse C-K.J., 1993 as in Parkerson, 1999), and one sample of health insurance policyholders (N=3521 Parkerson et al., 1994 unpublished data as in Parkerson, 1999).

Estimates of internal consistency (i.e., Cronbach’s alpha coefficients) ranged in the .60s to .70s for the multi-item scales (Physical .64-.77; Mental .52-.69; Social .47-.58;

General .73-.80; Self-Esteem .39-.67; Anxiety .46-.68; Depression .53-.67; AD .60-.73 as in Parkerson, 1999). The low reliability estimates were expected given the heterogeneous and relatively small number of items per scale (Parkerson, 1999).

Test-retest reliability coefficients to indicate temporal stability were provided by Parkerson (1999) for each of the subscales based on two studies with primary care patients (N=55 and N=54), and one with patients with musculoskeletal disorders (N=49). Coefficient alphas showed good reliability (Physical .59-.75; Mental .42-.70; Social .35-.67; General .59-.78; Perceived .54-.61; Self-Esteem .47-.78; Anxiety .62-.68; Depression .50-.70; Anxiety-Depression not available; Pain .41-.57; Disability .30-.68). According to Parkerson (1999), pain and disability experiences could disappear by retest, thus confounding the results. When chronic disorders were used, correlations rose to .57 for pain, and .68 for disability. Most psychometric standards place acceptable reliability for groups at .70 (Parkerson, 1999).

Clinical validity was investigated by comparing functional scores of patient groups that were expected to be different in their health problems. Statistically significant differences were found for physical health, anxiety, depression and pain scores (Parkerson, 1999). For instance, primary care patients expected to have mental health disorders had a lower mean score on the DUKE Mental Health subscale (or lower function in this area) than patients reporting painful physical problems or patients presenting for only physical maintenance. Predictive validity was also demonstrated when the DUKE screened for concurrent medical conditions for health services utilized by primary care patients (Parkerson, 1999). Parkerson (1999) also reported that a longitudinal predictive study with 307 patients showed that the DUKE physical health



subscale predicted 18 month health-related outcomes, follow-up visits, hospitalization and severity of illness

Convergent validity was assessed by comparing the DUKE with similar scales: the Sickness Impact Profile (Physical -.63; Mental -.48; Social -.41; General -.70; Disability .36), the Medical Outcomes Study (MOS) Short-Form 20 (Mental .51; Perceived .42; Pain .60; Disability -.32), the Tennessee Self-Concept Scale (Social .60; Self-Esteem .80), and the Center for Epidemiological Studies for Depression Scale (Depression .63; DUKE-AD .68) (Parkerson, 1999). Discriminant validity, or comparing the DUKE to dissimilar scales, further supported the validity of the DUKE. For instance, while the DUKE Social Health subscale was only moderately correlated with the SIP Social Interaction subscale, the correlations are much lower with dissimilar scales on the SIP (-0.14 with the SIP Physical and -0.23 with the SIP Mobility scale). Parkerson (1999) noted that it can be difficult to find content that is comparable across scales even when they hold the same label.

Discriminant validity was also tested by item-subscale correlations. Spearman rank-order correlation coefficients revealed higher correlations for specific Physical Health items and the rest of their scale than with items on the Social and Mental Health scales.

### **The RAND 36-Item Health Survey**

The RAND 36-item Health Survey (RAND, 1992) is a quality of life questionnaire with 8 subscales that tap health perception, including: Physical Functioning, Role Limitations due to Physical Health, Role Limitations due to Emotional Problems, Energy/Fatigue (also called Vitality), Emotional Well-Being, Social Functioning, Bodily Pain, and General Health. Ware and Sherbourne clinically developed the RAND Health

Survey as part of the four year Medical Outcomes Study (MOS) (Hays, Sherbourne, & Mazel, 1993). The original instrument for the study was the Short-Form 36. While the RAND Health Survey uses the same items as the SF-36, it has simpler scoring procedures. The RAND takes approximately 5-10 minutes to complete.

The Medical Outcomes Study examined specific characteristics of providers, patients, and health systems for their influence upon outcomes of care (Hays et al., 1993). The study was based on the wellness approach to health care, and the idea that patients should understand the impact of health care on their well-being as opposed to just their morbidity (Bishop, Chou, Chan, Rahimi, Chan, & Rubin, 2000). The SF-36 allowed health professionals to gain a holistic view of patients.

Scoring of the RAND 36-Item Health Survey is on a 100 point scale once coded using a scoring key, with high scores representing better health status (RAND, 1992). Items in the same scale are then averaged together to achieve the 8 subscale scores (RAND, 1992). Linear T-scores are recommended by Hays, et al. (1993) as a way to “equate central tendency and variability across scales” (p. 221). The standard scores are multiplied by 10 and 50 is added to the product to get the linear T-score. The resulting distribution of scores has a mean of 50 and a standard deviation of 10 (Hays et al., 1993).

Hays, Sherbourne, and Mazel (1993) provided details about which items on the RAND apply to certain subscales. The Physical Functioning subscale has 10 items, including questions about movement. For instance, the subject is asked to respond to how much their health limits their ability to participate in vigorous activities, climb, lift, walk, and bathe. The subscale for Role limitations due to physical health has four items that are answered in a yes/no format. These items ask the subject about whether physical health

has impacted their work or other regular activities during the past four weeks. The Role limitations due to emotional problems has 3 items that are also answered in a yes/no format. Somewhat similar to the previous scale, this scale asks whether emotional problems have created problems in work or regular activities over the past four months. The Energy/Fatigue subscale has four items. This subscale asks the subject to respond to questions about how often they have felt energetic or tired during the past four weeks. Six response options ranged from All of the Time, Most, A Good Bit, Some, A Little, and None of the Time. The emotional well-being subscale contains five items. It also uses the all to none of the time option set, and has questions about being a nervous person, being down in the dumps, being calm and peaceful, being downhearted, and being happy. The Social Functioning subscale contains two items. One item about to what extent that physical or emotional problems have interfered with normal social activities in the past four weeks has five response options ranging from Not at all to Extremely with a midpoint of Moderately. The second question on the Social subscale was about how much of the time physical or emotional problems interfered with normal social activities. This latter question has a five response option set of All of the Time to None of the Time. The midpoint was Some of the Time. The Pain subscale has two items. The first item asks about bodily pain in past four weeks and uses a six response option set of None to Very Severe with midpoints of Mild and Moderate. The second question in the Pain subscale asks about how much pain interfered with normal work. This question has a five response option set from Not at All to Extremely, with Moderately as the midpoint. The General Health subscale has five items. The first item asks the subject to rate their general health on a five-point scale from Excellent to Poor. The last four questions on the

scale ask how much certain statements are true or false for the subject based on a five point scale of Definitely true to Definitely False, with a midpoint of Don't Know. The questions ask about getting sick easier than other people, expectations of health, and level of agreement with overall health rated as excellent (Hays et al., 1993).

Hays, Sherbourne and Mazel (1993) proposed that the RAND 36-Item health Survey can be psychometrically compared to the SF-36 since they have identical items. Hays et al. (1993) found that the RAND and the SF-36 correlated .99, and concluded that scoring differences had minimal effects on the total health scores for subjects. The only differences were on the Pain and General Health scales. The Pain subscale includes two items (bodily pain in past 4 weeks and interference of pain with normal work) (RAND, 1992). In the SF-36, the scoring procedure makes the score on the second question conditional upon the first, but this is not the case with the RAND scoring. The RAND 36-Item Health Survey generally reports higher scores on this scale (or less pain). The General Health Scale is also slightly different between the two scales; however, Hays, et al. (1993) reported that the two scales correlate at .99. Typically, the SF-36 General Health score is higher than the RAND (Hays et al., 1993).

Internal consistency was measured by examining correlations between items within a scale. The data used for this analysis was from the Medical Outcomes Study. Subjects were 2471 adult patients visiting their physician for one of four chronic health conditions (hypertension, diabetes, heart disease, or depression). Cronbach's alpha coefficients were reported for the SF-36 at .78 and above for all subscales (Physical .93; Role-Physical .84; Role-Emotion .83; Energy .86; Emotional well-being .90; Social .85; Pain .78; General .78) (Hays et al., 1993).

Garratt, Ruta, Abdalla, Buckingham, and Russell (1993) assessed the reliability of the SF-36 using 1700 patients with common clinical conditions (e.g., backaches, ulcers) from clinics in Scotland. Cronbach's alpha coefficients demonstrated good reliability (Physical .92; Social .80; Role-physical .89; Role-emotional .86; Mental .86; Energy/fatigue .86; Pain .86; General .83), with above a .70 being acceptable reliability for a scale. Garratt et al. (1993) found that correlations between specific items on a scale and the rest of that scale were higher than that item's correlations with other scales (.55-.78, with above a .4 as good). Brazier, Harper, Jones, O'Cathain, Thomas, Usherwood, and Westlake (1992) also examined reliability of the SF-36. The sample was almost two thousand patients ranging in age from 16 to 74 years, who were randomly selected from two, health practice lists. Cronbach's alpha ranged from .73-.96 (Physical .93; Social .73; Role-physical .96; Role-emotional .96; Pain .85; Mental .95; Vitality .96; General .95), and reliability coefficients were greater than .74 for all items except for the Social subscale (Physical .93; Social .74; Role-physical .88; Role-emotional .79; Pain .84; Mental health .91; Vitality .87; General .80). Test-retest reliability would only test the degree of association between correlation coefficients at the time of testing as opposed to the direction. Thus, Brazier et al. (1992) examined the distribution of differences in scores, and calculated an overall mean and variance for the differences. Scores were assumed to have the same distribution when the differences had a mean of 0, and 95% were within the 95% confidence limits (Brazier, et al., 1992). The results were Physical 98%, Social 93%, Role-physical 98%, Role-emotional 97%, Pain 95%, Mental 91%, Vitality 96%, General 96% (Brazier et al., 1992).

Brazier et al. (1992) assessed construct validity for the SF-36. The SF-36 demonstrated an ability to distinguish between groups that had health differences (Brazier et al. 1992). For instance, those who were using health services were expected to have poorer perceived health, and this was verified by the SF-36. Garratt et al. (1993) also noted that profiles for various medical conditions differed from the general population in a predictable manner. Further, Garratt et al. (1993) revealed that lower scores on the SF-36 were related to perceptions of general practitioners about health severity.

To test for construct validity, Garratt et al. (1993) performed a confirmatory factor analysis using the British population of 1700 patients with a common health condition. This tested the agreement between the hypothesized factors in the measure and the scales designed to assess those factors. The five hypothesized factors were (F1) physical functioning, (F2) mental health and energy, (F3) social functioning, pain, and role limitations due to physical problems, (F4) general health perception, and (F5) role limitations due to emotional problems. Factors are considered relevant if the eigenvalue exceeds 1-1 according to Garratt et al. (1993). In this analysis, the five factors were identified, with eigenvalues before rotation of Physical 12-8, Mental 3-8, Role-physical 2-1, General 1-8, and Role-emotional 1-3. None of the health scales spread across more than a single factor.

Ware and Sherbourne (1992) noted that an advantage of the SF-36 is its ability to pick up on low levels of ill health that the Nottingham Health Profile (another health measure) does not. Brazier et al. (1992) also compared the SF-36 to the Nottingham Health Profile, and noted that the SF-36 is a preferable measure for health of the general population, including those in the community.

Jenkinson, Wright, & Coulter (1994) compared 7 of the subscales on the SF-36 to the one scale giving a global health score and found good criterion validity. Significantly greater health problems were correlated with worse self-ratings on the General Health scale.

### **The Perceived Wellness Survey (PWS)**

The Perceived Wellness Survey (PWS) is a 36-item, self-report measure of perceived wellness that measures six dimensions of wellness: physical, spiritual, psychological, social, emotional, and intellectual (Adams, Bezner, & Steinhardt, 1997). Adams et al. (1997) selected multiple dimensions of wellness in accordance with systems theory that suggests simultaneous function in multiple dimensions, a theory that is supported by many wellness researchers. Each dimension was selected “based on the strength of theoretical support and quality of empirical evidence supporting each” (Adams et al, 1997, p. 210). A second reason for developing the PWS was to provide a valid, theoretically based measure of perceived wellness. Although there is significant evidence to support perceptual measures as a predictor of health outcomes, available wellness instruments combine behavioral and perceptual items making it difficult to examine “the contribution of perceptions to wellness” (Adams et al., 1997, p. 210).

The development of the PWS began by combining 69 items from six different scales (i.e., the MOS-36; Existential Well-Being Scale; Perceived Social Support Friends and Family; Perceived Social Support; Sate Self-esteem Scale). This initial version of the PWS was piloted several times. The two social support scales were combined into one scale to total five subscales: physical, spiritual, psychological, social, and emotional (Adams et al., 1997). Items were reduced after several procedures. An item correlation matrix was used to identify redundant items that were then reduced into a single item.

Then an item-to-total-scale correlation was examined and coefficients lower than .40 were excluded. Finally, items were selected which had the best content match between item and the subscale definition. The authors added a sixth scale to represent the intellectual dimension, a dimension selected for inclusion due to theoretical and empirical evidence supporting it as a construct of wellness (Adams et al., 1997). The revised version of the PWS included six items for each of the six dimensions. Item order was designed so that each dimension was represented by every sixth item to reduce item order effects. Further, positive and negatively worded items were spread evenly throughout the scale (Adams et al., 1997).

Pilot research was conducted to examine the reliability and validity of the PWS using a convenience sample of corporate employees ( $n=393$ ) completing an annual health screening, and students ( $n=112$ ) from a health education class in Texas. Convergent validity ranged from  $r = .37$  -  $.56$ , and internal consistency produced coefficient alphas from  $.89$  -  $.91$ . The internal validity of the total scale had an item-to-total scale correlation over  $.30$ . Subscale estimates of internal consistency included: physical (.81), spiritual (.77), psychological (.71), social (.64), emotional (.74), and intellectual (.64) (Adams, et al., 1997). Split-half correlation coefficients were conducted to determine the degree to which internal consistency was influenced by subscale length: physical ( $r=.71$ ), spiritual ( $r=.68$ ), psychological ( $r=.62$ ), social ( $r=.52$ ), emotional ( $r=.61$ ), and intellectual ( $r=.53$ ) (Adams et al., 1997). Each subscale was significantly correlated ( $p \leq .05$ ) with the composite wellness score and with each other. The intercorrelation matrix showed positive correlations rather than negative. Adams et al. (1997) concluded that the high



alpha coefficients support the reliability of the PWS. Test-retest reliability remains to be addressed (Adams et al., 1997).

Discriminant validity of the PWS was assessed by developing a unique version of the measure for this purpose. Two sets of six statements from subscale definitions were created, in which one set described a well person and the other an unwell person (e.g., “Identify five employees who seem to always be physically healthy” and “Identify five employees who seem to expect that positive things will result no matter what the circumstances”, or “Identify five employees who seem to always be physically unhealthy” and “Identify five employees who seem to be insecure with who they are” (Adams et al., 1997, p. 213). Discriminant validity was assessed by asking five health professionals familiar with participants from the corporate companies to identify the employees, from the sample of those that completed the PWS, that best exemplified the statements describing a well and unwell person. Discriminant validity was determined using a t-test comparison of the PWS composite score means between well and unwell groups. The health professionals were able to correctly distinguish between high and low perceived wellness ( $t=5.46$ ,  $p<.05$ ,  $df=38$ ). Based on this early evidence, the authors concluded that the PWS demonstrates good discriminant validity (Adams et al., 1997).

Face Validity was assessed by giving a modified version of the PWS to the student sample ( $n=36$ ) at the time of assessment in the original study. The face validity version of the PWS contained the same items as the PWS, but in randomized order, and with descriptions of each dimension of wellness. The degree to which students were able to correctly identify the dimension represented by each item was set at  $r \geq .80$  between student and correct matches. Students were able to correctly match items to dimensions

( $r = .98, p \leq .05$ ). Five of five experts on the theoretical foundations of the PWS agreed that the statements of the discriminant validity version of the PWS were noted to accurately represent the content of the PWS subscales. Adams et al. (1997) concluded that content validity was strong for the PWS.

The PWS items were factor analyzed to determine if they clustered into meaningful groups using principal axis factoring, and a scree plot was examined to determine the most appropriate number of factors. The factor analysis revealed that all items clustered on a single factor, labeled perceived wellness, and the first and second factors (i.e., emotional and spiritual) were widely separated on the scree plot suggesting that the PWS is a unidimensional scale. Adams et al. (1997) noted that this can be attributed to the related content of items and their perceptual nature. "This does not suggest that wellness is a unidimensional phenomenon, only that perceptions of wellness in hypothetical dimensions are more related by their perceptual nature than they are differentiated by their content" (Adams et al., 1997, p. 215).

The six dimensions of the PWS are defined as follows. The physical wellness dimension measures "positive perception and expectation of physical health" (Adams et al., 1997, p. 210). For instance, a sample item from this subscale is "I expect to always be physically healthy" (Adams et al., 1997, p. 212). Adams et al. (1997) noted that by measuring perception in this dimension, researchers can account for difference in "health preferences, values, needs and attitudes" (p. 210). Further, the authors noted that poor perceived health in the presence of good objective health still resulted in a greater risk of death than in a reverse situation. The spiritual wellness dimension was defined as a "positive perception of meaning and purpose in life" (Adams et al., 1997, p. 210). A

sample item from this subscale is “I believe there is a real purpose for my life” (Adams et al., 1997, p. 212). The psychological wellness dimension is defined as perception and expectation for positive outcomes in life. This construct is similar to optimism in the literature. A sample psychological item on the PWS is “In the past, I have expected the best” (Adams et al., 1997, p. 212). The social wellness dimension involves the perception of available support and the “perception of being a valued support provider” (Adams et al., 1997, p. 211). A sample item from the social subscale is “My friends will be there for me when I need help”. The emotional wellness dimension of the PWS measures two qualities of self-esteem: secure self-identity and positive self-regard. A sample item from the emotional subscale is “In general, I feel confident about my abilities” (Adams et al., 1997, p. 212). The intellectual wellness dimension is defined as the perception of being “internally energized by an optimal amount of intellectually stimulating activity” (Adams et al., 1997, p. 211). A sample item from the intellectual subscale is “In the past, I have generally found intellectual challenges to be vital to my overall well-being” (Adams et al., 1997, p. 212).

The PWS was designed so that the subscales could be scored and used independently (Adams et al., 1997). Each item has a six point, Likert-scale response set, ranging from very strongly agree to very strongly disagree. The dimensional scores on the PWS can be integrated by combining the mean of each dimension with the standard deviation among dimensions to form a composite score of wellness (Adams et al., 1997).

### **The Wellness Evaluation of Lifestyle – Form J**

The Wellness Evaluation of Lifestyle (WEL) was developed to assess wellness/well-being. (Hattie et al., in press). Now in its fifth iteration, the WEL includes 17 subscales that measure the life tasks described in the Wheel of Wellness (Witmer &

Sweeney, 1992). Five major life tasks relating to wellness are assessed (Existential self, Social Self, Interactive Self, Physical Self, and Intra-active Self), as well as twelve corresponding subtasks (Spirituality, Self-care, Gender Identification, Cultural Identification, Friendship, Love, Intellectual stimulation, Sense of control, Emotional Responsiveness, Sense of Humor, Work, Exercise, Nutrition, Leisure, Stress Management, Sense of Worth, and Realistic Beliefs) (see Table 3:1).

Hattie, Myers, and Sweeney (in press) determined that a holistic measure was needed in light of the paradigm shift in health that emphasized optimal well-being. Further, the Department of Health and Human Services released a document in 1990 calling for measures of health promotion that examined many dimensions of health (Hattie et al., in press). The WEL was developed in response to that call, and it represents one of the first multidisciplinary models of wellness, the Wheel of Wellness (Myers et al., 2000).

The Wheel of Wellness was a wellness model that reflected a variety of concepts, including psychology, anthropology, sociology, religion, and education, as well as a range of theories: personality, social, clinical, health, developmental psychology, stress management and ecology (Witmer & Sweeney, 1992). The circumplex design was created to represent the interconnectedness among the various dimensions of wellness; thus, reflecting the new paradigm of holistic health. Spirituality was at the core of the wheel, indicating its role as the center of wholeness (Witmer & Sweeney, 1992). Self-regulation made up the next circular area in the wheel, and was divided into twelve subtasks (sense of worth, sense of control, realistic beliefs, emotional responsiveness, intellectual stimulation/problem-solving/creativity, sense of humor, exercise, nutrition,

self-care, stress management, gender identification, and cultural identification) (Hattie et al., in press). The subtasks were depicted as the spokes of a wheel to represent their interconnections with the other life tasks and characteristics of a healthy person (Witmer & Sweeney, 1992). Moving further outward in the circle, the life tasks of Work, Love, and Friendship were all equally placed at this layer. The Wheel of Wellness was used as the basis for developing items on the WEL (Hattie et al., in press).

Seven studies were conducted, over a ten-year period, to test the psychometric properties of the WEL (Hattie et al., in press). Items were developed from the Wheel of Wellness to directly assess the five life tasks and the twelve subtasks noted in the chart above (Hattie et al., in press). Convenience samples of undergraduate and graduate students, mental health outpatients, professional counselors, and some older persons attending Elderhostel programs were used (Hattie et al., in press). Age ranges were from 18-91, with 46% college aged. The original version of the WEL, the WEL-O, included 114 items and had 16 subscales. The first administration of the WEL was to 723 individuals, including undergraduate and graduate students, older persons attending Elderhostel programs, mental health outpatients, and professional counselors. In a second administration, internal stability of the WEL-O was assessed using a sample of 99 undergraduate students over a two-week interval. Coefficient alphas exceeded .68 for all scales indicating acceptable stability (Friendship .86; Love .82; Intellectual .75; Sense of Control .79; Emotional responsiveness .81; Sense of humor .79; Work .82; Leisure na; Stress Management .78; Sense of Worth .72; Realistic beliefs .81; Spirituality .89; Self care .94; Gender identification .75; Cultural identification .68; Nutrition .88; Exercise .80) (Hattie et al., in press).

Although nine scales on the WEL-O had estimates of reliability greater than .65, and four were between .61 and .64, estimates for three scales (Gender identification, .45, Cultural identification, .34, and Nutrition, .57) were determined to be too low (Hattie et al., in press). However, because item-total correlations within those scales indicated that each item contributed positively to the total score, the authors constructed additional items that were added to each of these scales (Hattie et al., press). This represents the initial revision of the WEL-O, and the creation of the WEL-R.

The WEL-R consisted of the original 114 items, plus 17 additional items for a total of 131 items (Hattie et al., in press). It was administered to 1,394 individuals, including undergraduate and graduate students, professional counselors, as well as corporate mid-level managers. While the prior scales with low estimates of reliability improved, twelve scales of the WEL-R had reliability estimates still considered to be too low (Hattie et al., in press). A factor analysis indicated that the Work and Leisure Scale, which was combined in one scale, could be improved by splitting it into two scales. Additional items were developed to measure the new Leisure scale, and the four scales with low reliabilities (Hattie et al., in press). This represents the second revision of the WEL.

The third study of the WEL was based on the WEL-G, which was developed to lower the reading level of the WEL-R from 12<sup>th</sup> grade to an average 7<sup>th</sup> grade reading level. The WEL-G had 97 items that measured 16 scales. It was administered to 122 high school students in a rural area. Reliabilities for 14 of the scales exceeded .65; however, estimates remained too low for Self-care, Realistic beliefs, and Leisure scales (Hattie et al., in press). Therefore, a fourth study and revision of the WEL was needed.

The fourth iteration of the WEL, the WEL-S, was created after an item analysis of the first three versions, and a series of factor analyses. The WEL-S included a new scale, the Leisure scale. Based on a sample of 846 persons similar to previously described samples, the estimates of reliability for 16 of the 17 scales exceeded .65. The new Leisure scale was .61 (Hattie et al., in press).

Given a concern that the previous versions of the WEL were too long, a fifth iteration of the WEL was created (Hattie et al., in press). The WEL-J, a 73 item instrument, was designed with just 4-6 items per scale (Hattie et al., in press). The WEL-J was administered to 2,295 persons, including graduate and undergraduate students, mid-level managers, and professional counselors (Hattie et al., in press).

By the fifth version of the WEL, the WEL-J, estimates of reliability had improved to exceed .85 for all scales except the Realistic Beliefs scale (Friendship .94; Love .92; Intellectual .89; Sense of Control .90; Emotional Responsiveness .88; Sense of Humor .86; Work .87; Leisure .88; Stress Management .89; Sense of Worth .93; Realistic Beliefs .60; Spirituality .91; Self care .81; Gender Identification .91; Cultural Identification .85; Nutrition .88; Exercise .88) (Hattie et al., in press). Hattie et al. (in press) noted that the low internal consistency on the Realistic Beliefs scale is consistent theoretically because unrealistic beliefs are not necessarily related.

Hattie et al. (in press) conducted an exploratory factor analysis of the 17 scales and found five second-order factors, which they labeled Existential Self, Social Self, Interactive Self, Physical Self, and Intra-active Self (see Table 3:2). Existential Self included spirituality, self-care, gender, and cultural identity or identification. Social Self included subscales of friendship and love. Interactive Self included the subscales

Intellectual Stimulation, Sense of Control, Sense of Humor, Work and Emotional Awareness. Physical Self included Exercise and Nutrition. Intra-active Self included the subscales Real Beliefs, Leisure, Stress Management, and Sense of Worth.

The WEL-J uses a four-point Likert scale from strongly agree to strongly disagree (Hattie et al., in press). A composite score for the tasks of Self-Direction is reported, as well as a total wellness score. The scales are converted to a score between 20 and 100, which is then plotted graphically relating the scores to each dimension of wellness in a wellness profile (Hattie et al., in press; Myers, et al., 2000). The number of items per scale varies, therefore each item is converted to a score that ranges from 25 to 100 by dividing the total score for each scale by the number of items and then multiplying by 25. This allows all scales to be on a common metric. Means and standard deviations are reported based on the transformed scale because the 25 to 100 scale makes it easier to interpret and to make comparisons among the scales. The original raw score is used for all data analyses to avoid loss of information due to rounding.

In the original WEL, spirituality was depicted as the center of a healthy individual. The five other dimensions of wellness were spokes of the wheel, connected to each other by spirituality at the core. Hattie et al. (in press) noted that their research did not support the wheel model of wellness. Correlations did not increase again as they moved further away from the diagonal, as they should for a circumplex model like the wheel (Hattie et al., in press). Instead, analyses supported wellness as the core of the wheel with the five other dimensions considered second-order dimensions (Hattie et al., in press).

A restricted factor analysis revealed that the five second-order factors loaded onto a single third-order factor labeled as "Wellness" (Hattie et al., in press, p. 12). Hattie et



al. (in press) noted that the goodness of fit index was .042, indicating an acceptable fit of the data to the model with wellness at the center. Wellness was “best referenced by Interactive and Intra-active, and least by Physical” (Hattie et al., in press, p. 13).

### **Existential self**

The Existential factor has four subscales: Spirituality, Self-care, Gender Identity, and Cultural Identity/Identification. The Spirituality scale has five items and refers to “an awareness of a being or force that transcends the material aspects of life and gives a deep sense of wholeness or connectedness to the universe” (Myers, et al., 2000, p. 252). It includes qualities of hope, optimism, purpose in life, and transcendence. Myers, et al. (2000) explained that spirituality can include religion, but is a broader concept. Examples of phrasing for the Spirituality component include “greater power than me, beliefs guide daily life, participate in spiritual, regular part of life, essential life journey” (Hattie et al., in press, p. 32). Hattie et al. (in press) cited a positive correlation found from the literature between spirituality and such factors as mental health, life satisfaction, and wellness.

The Self-care scale has 4 items and covers preventative habits as well as remedial care that extend the longevity of life and its quality. For instance, “do not use tobacco, no excess alcohol, no illegal drugs, wear seat belt” constitute self-care items (Hattie et al., in press, p. 33). Myers et al. (2000) identified three components of self-care: safety habits, health check-ups, and avoiding harmful substances. In particular, self-care was described as taking responsibility for one’s wellness, which is a core concept of high-level wellness.

The Gender Identity scale has four items and refers to the satisfaction and confidence in one’s gender identity. Hattie et al. (in press) listed qualities measured by

this scale: “gender affects quality, positive identity, pride in gender, and support from others” (p. 34). Gender identification, or differences, have been linked to illness and wellness in adulthood (Myers et al., 2000).

The Cultural Identity, or Identification, scale has three items and incorporates racial identity and is the acceptance of and pride in the uniqueness and benefits of one’s culture (Myers et al., 2000). This construct was assessed by asking about whether culture enhances quality of life, is a source of pride, and if the individual has cultural support (Hattie et al., in press).

### **Social self**

The Social Self factor has two subscales: Friendship and Love. The Friendship scale has four items that assess “social relationships that involve a connection with others, either individually or in community, but do not have a marital, sexual, or familial commitment” (Myers et al., 2000, p. 256). Specifically, items assess “friends I can depend on, give emotional support, friends for information, friendships that satisfy” (Hattie et al., in press, p. 33). Within this area, Myers et al. (2000) explained that social interest can lead to empathy, cooperation, and altruism. Myers et al. (2000) reviewed the research and found links between friendship quality and sense of well-being (Ishii-Kuntz, 1990), mental and physical health (Ullione, 1996), depression (Cooney & Kurz, 1996), happiness (Adams & Bleizner, 1995), and health behaviors. (Broman, 1993; Toner & Morris, 1992). In addition, Myers et al. (2000) noted that socially isolated individuals are more likely to die from various diseases than those with fulfilling social lives.

The Love scale has four items and assesses healthy love relationships. Characteristics of health in this area included: trust, receiving and expressing affection, nonpossessive caring, enduring relationships, satisfaction with closeness and touch

(Myers et al., 2000). Examples of content covered by this scale's items include having at least one person in one's life who cares, having someone that one can confide in, having an emotional relationship, and having an intimate relationship in one's life (Hattie et al., in press). A review of the literature by Myers et al. (2000) revealed that whether a person feels loved and valued by others is linked to: premature death and disease (Ornish, 1998), poorer immune system function and resistance to disease (Kiecolt-Glaser, Malarkey, Chee, Newton, Cacioppo, Mao, & Glaser, 1993), psychiatric symptoms and purpose in life (Shek, 1995), and lower depression (Lawler, Volk, Viviani, & Mengel, 1990). Myers et al. (2000) also noted that committed relationships were linked to better physical and emotional responses to stress (Winefield, Winefield, & Tiggeman, 1992), and perceived health in family was related to healthier lifestyles in college students.

### **Interactive self**

The Interactive-Self factor includes five subscales: Intellectual stimulation/ Problem-Solving/Creativity, Sense of Control, Sense of Humor, Work, and Emotional Awareness/Responsiveness. The Intellectual Stimulation/Problem-solving/Creativity scale and four items and refers to intellectual stimulation and a balance of brain functioning that is logical and involves a sense of awe and wonder. Hattie et al. (in press) identified sample items: "seek others views, learn new things, good problem solver, and find creative solutions" (p. 33). Correlates with effective problem solving included "reduced anxiety and depression, increased stress hardiness, and overall psychological adjustment (Benson & Stuart, 1992)" as noted by Myers et al. (2000). Creativity was described as a characteristic of self-actualizing people and involves imagination and originality. Myers et al. (2000) identified research (Goff, 1993) that linked creativity with "life satisfaction, mental health and overall wellness" (p. 254).

The Sense of Control Scale has four items and measures an individual's perception of whether they have an impact on what happens to them or a lack of control. Sample items on this subscale include "achieve goals I set, solve own problems, plan ahead, take charge and manage" (Hattie et al., in press, p. 34). Myers et al. (2000) reviewed research which has linked perceived control with "emotional well-being, successful coping with stress, better physical health, and better mental health over the life span (Daniels & Guppy, 1994; Pelletier, 1994)" (p. 254), as well as hardiness (Kobasa, 1979) and increased life satisfaction (Cvetanovski & Jex, 1994). Further, a higher sense of self-control has been linked to healthier behaviors (Birkimer, Johnston, & Berry, 1993) and health practices (Donaldson & Blanchard, 1995; Fontane, 1996) as noted by Myers et al. (2000). Myers et al. (2000) also cited research demonstrating a negative correlation between perceptions of control and anxiety and depression (Cvetanovski & Jex, 1994).

The Emotional Awareness/Responsiveness scale has four items and uses the positive management of emotions (e.g. ability to experience and express feelings) as an index of healthy functioning (Myers et al., 2000). For instance, "aware of how I feel, express feelings well, range of emotions, feeling spontaneous" (Hattie et al., in press, p. 33). Myers et al. (2000) noted several studies that have linked emotions with illness or suppressed immune functioning (Witmer, 1996; Temoshok & Dreher, 1992; Hafen, et al., 1992; Dillon, Minchoff, & Baker, 1985). In one study (Compton, Smith, Cornish, & Qualls, 1996), positive emotions were correlated with positive mental health (Myers et al., 2000).

The Sense of Humor scale has four items and measures the cognitive and emotional aspects of humor. Specifically, this dimension can involve the recognition, appreciation,

and creation of humor. Samples of phrasing include “able to laugh at self, humor for perspective, humor in serious tasks, good sense of humor” (Hattie et al., in press, p. 33). Myers et al. (2000) cited research that linked laughter to enhanced immune system and sense of well-being (Erdman, 1991; Solomon, 1996). Researchers have found that humor is positively correlated with reduced depression and pain relief (Carroll, 1990), more positive cognitive appraisals in regards to self and life events (Martin, Kuiper, Olinger, & Dance, 1993), and improved creativity, problem-solving and sense of power (Hafen et al, 1992) (Myers et al., 2000).

The Work scale has four items that assess work satisfaction. Myers et al. (2000) explained that work satisfaction is “composed of challenge, financial reward, coworker relations, and working conditions” (p. 256). The work subscale asks the respondent about whether they look forward to work, if their work uses their abilities, if they have a sense of control over conditions, and if they feel appreciated by others (Hattie et al., in press). Variables that have been positively correlated with work include life satisfaction (Lam, Foong, & Moo, 1995), emotional well-being (Burke & McKeen, 1995) (Myers et al., 2000). Further, Myers et al. (2000) noted research that found work satisfaction to be one of the best predictors of longevity and perceived quality of life (Pelletier, 1994). Myers et al. (2000) noted that work provides psychological and social functions, and can provide experiences of flow, or positive states of consciousness.

### **Physical self**

The Physical Self factor includes two subscales: Exercise and Nutrition. The Exercise scale has five questions and measures regular physical activity. For instance, the respondent is asked about whether weight is in acceptable range, if they have a regular stretch exercise, if they consider themselves to be active and enjoying regular exercise,

and if they think it is important to be fit (Hattie et al., in press). Myers et al. (2000) cited research that noted a correlation between physical fitness and positive emotionality (Brandon & Loftin, 1991), enhanced cognitive functioning (Wykoff, 1993), decreased state-anxiety (S.R. Cramer, Nieman, & Lee, 1991), decreases in mild depression, reduced stress, and positive impacts on chronic illnesses (International Society of Sports Psychology, 1992), and sense of social identity (Fontane, 1996).

The Nutrition scale has five items and measures eating and drinking habits. Items such as balanced diet, three meals a day, variety of foods, adequate vitamins and feeling satisfied with diet are used (Hattie et al., in press). Myers et al. (2000) noted a study linking eating and drinking habits of Americans to many of the leading causes of death (U.S. DHHS, 1996). Further, Myers et al. (2000) identified studies that found dietary quality to be impacted by factors such as social support (Toner & Morris, 1992), loneliness and poor physical health (Walker & Beauchene, 1991).

### **Intraactive self**

The Intra-active Self factor includes four subscales: Leisure, Stress, Sense of Worth, and Realistic Beliefs. The Leisure scale has six items and measures play, including: "physical, social, intellectual, volunteer and creative pursuits" (Myers et al., 2000, p. 256). Specific items ask the respondent whether their leisure is important and pleasurable, if they make time for leisure and can stand still, if they manage stress, and if satisfied with leisure (Hattie et al., in press). Myers et al. (2000) cited research that has demonstrated correlations between leisure activities and positive self-esteem (Reitzes, Mutran, & Verrill, 1995), perceived wellness (Ragheb, 1993). Further, life satisfaction was influenced by selection of leisure activities that matched one's personality type (Melamed, Meir, & Samson, 1995) (Myers et al., 2000).

The Stress management scale has four items that measure ability to identify stressors and use stress reduction strategies in one's life. Specifically, items address coping with life, stress, thoughts, and ability to relax (Hattie et al., in press). Myers et al. (2000) noted that research on people with good stress management have a more positive immune system responses (Green & Shellenberger, 1991), greater internal locus of control (Keita & Jones, 1990), and more positive mental and physical health (Compton et al., 1996).

The Sense of Worth scale has four items and taps into self-concept, self-esteem, and self-worth. Sample items on this scale include "accept self, worthwhile person, like spite imperfections, value as unique person" (Hattie et al., in press, p.33). Myers et al. (2000) noted that high self-esteem has been related to prevention and recovery from illness (e.g., Hafen, Franksen, Karren, & Hooker, 1992) as well as predicting life satisfaction in individualist countries like the United States (e.g., Kwan, Bond, & Singelis, 1997).

The Realistic Beliefs scale has five items and measures realistic beliefs and ability of people to accept themselves as imperfect. The background for this scale comes from Ellis' (1973) theory of irrational beliefs creating discomfort rather than events. Sample items include "seldom jump to conclusions, need not be liked by all, like despite goals unmet, usually get what I want, not responsible for others" (Hattie et al., in press, p. 33). Myers et al. (2000) noted that research studies (Covin, Block, & Funder, 1995) connect accurate appraisal of self and reality to positive mental health. Unrealistic beliefs were described as tied to unhealthy behaviors (Myers et al., 2000).

In a sixth study on the WEL, several multivariate analyses of variance (MANOVAs) were conducted to explore differences between the means. The sample included a composite of all previous participants. Hattie et al. (in press) described the composite. There were five age groups: 10-18 = 7.2%; 19-25 = 46.2%; 26-35 = 17.8%; 36-55 = 22.5%; 56+ = 6.3%. There were three cultural groups: African American 9.1%; White 80.5%; Other (Hispanic, Asian) 10.4%. Five Educational levels were represented: High School Diploma 44.4%; Technical, Trade, or Associate Degree 9.8%; Bachelor's 30.1%; Master's 10.9%; Doctoral 4.8%. Participants were divided into two groups according to whether they lived alone (17.4%) or did not live alone (82.6%). Finally, there were five community sizes noted: Rural 7.0%; Small town 16.2%; Midsize town 26.3%; Large town/city 14.7%; Metropolitan area 35.7%. indicated good construct validity by showing patterns in differences between means that would be expected. For instance, the MANOVAs revealed significance on the age variable, with respondents expressing greater Self-Care, Spirituality and Work scores as they got older. Hattie et al. (in press) attributed this difference to the value of life experience in increasing appreciation for values and health. In addition, the midyears group (36-55 years) had the lowest scores on the Leisure subscale, as compared to the other groups (10-18, 19-25, 36-55, and 56 and over). This finding was consistent with developmental career and family demands at this time (Hattie et al., in press).

No significant gender differences were found; however, the Sense of Worth subscale revealed a significant cultural difference with African Americans scoring highest compared to White, Others, mainly Hispanics and Asian Americans (Hattie et al., in press). Finally, Hattie et al. (in press) found that single persons had significantly lower



scores on several scales (Nutrition, Realistic Beliefs, Work, Spirituality and Self Care), while widowed persons scored the highest among various marital statuses (separated, divorced, and widowed). According to Hattie et al. (in press), satisfaction and acceptance toward relationships and life were important to wellness.

The seventh study on the WEL, involved tests of validity. Using a sample of 229 graduate students in counseling courses, the WEL was compared to other instruments that measured similar characteristics (Hattie et al., in press). When compared to subscales of Testwell, another wellness instrument developed by the National Wellness Institute (2000) in 1983, the WEL demonstrated good validity. Hattie et al. (in press) found that the WEL correlated with scales based on similar definitions: Spirituality .60 with the Spirituality Testwell scale; Sense of Worth .50 with Emotional Awareness; Sense of Control .38 with Emotional Control; Realistic Beliefs .45 with Emotional Control; Emotional Responsiveness .67 with Emotional Awareness and .60 with Emotional Control; Intellectual Stimulation .47 with Intellectual; Exercise .61 with Physical Fitness; Nutrition .74 with Nutrition and .62 with Self-Care; Humor .41 with Emotional Control; Self-care .48 with Self-Care; Stress Management .31 with Self-Care; Work .41 with Occupational; Total Wellness .77 with Composite Testwell score. Hattie et al. (in press) noted that when the stress management scale was compared with other coping subscales (self-care on Testwell and coping on the Coping Resources Inventory by Hammer & Marting, 1987), the definitions did not match well. The WEL's definition of stress management is limited to cognitive coping strategies and it may be necessary to consider other WEL scales related to coping such as Existential Self, Intra-active Self, and

Physical Self (Hattie et al., in press). Hattie et al. (in press) also reported good face validity for the WEL.

### **Spiritual Involvement and Beliefs Scale (SIBS)**

The Spiritual Involvement and Beliefs Scale - Revised (SIBS-R) is a 22-item measure of spirituality developed by Rob Hatch and associates to facilitate physicians understanding of the spiritual dimension of patients (Hatch, 2000). It takes approximately ten minutes to complete. The instrument contains four clusters or subscales: “(1) Core Spirituality (connection, meaning, faith, involvement and experiences), (2) Spiritual Perspective/Existential spirituality, (3) Personal Application/Humility, and (4) Acceptance/Insight (recognizing futility of focusing on things which cannot be changed)” (Hatch, 2000, p. 2).

Programs such as Alcoholics Anonymous and Hospice have brought attention to the potential for spirituality in health care (Hatch, Burg, Naberhaus, & Hellmich, 1998). Hatch et al. (1998) noted that since the early 1980s, the biopsychosocial model has been growing in medicine with its emphasis on psychological and environmental influences on health. Recently, there is an increasing body of literature suggesting that the spiritual dimension influences the psychological, and in turn, influences the physical and social dimensions (Hatch et al., 1998). However, Hatch et al. (1998) believed that there was a lack of reliable assessments on spirituality available to physicians, therefore, discouraging exploration of this dimension with patients.

Hatch and his associates proposed that the Spiritual Well-Being Scale (Paloutzian & Ellison, 1991) was too narrowly focused on Judeo-Christian religion. Further, they noted that instruments emphasizing only religion failed to recognize that spirituality might exist separate from organized religion. Thus, in developing the SIBS, Hatch et al.

(1998) surveyed individuals from a variety of cultural and religious traditions in pursuit of the underlying principles shared by multiple perspectives. Another area that Hatch and associates hoped to improve upon was the failure of many spirituality instruments to measure actions. The SIBS was therefore designed to reflect both the application of spiritual principles in daily life and the internal effects of actions.

The External/Ritual subscale assesses spiritual activities/rituals or a belief in an external power. The Internal/Fluid subscale assesses evolving beliefs as well as internal beliefs and growth. The Existential/Meditative subscale has items referring to the existential aspect of spirituality. The Humility/Personal Application subscale measures humility and application of spiritual principles in daily life (Hatch et al., 1998).

In order to examine the psychometric properties of the SIBS, Hatch et al. (1998) administered the SIBS to a sample of 83 individuals, 50 were patients from a rural family practice and 33 were family practice professionals at a workshop for development of the SIBS. Internal consistency was .92. Twenty of the 26 items on the SIBS had correlations with the overall SIBS that were greater than .40 (a minimum acceptable level established by authors). The items that did not meet the minimum were evaluated by measuring scale homogeneity with that item removed (e.g., coefficient alpha). These items had high alphas and were noted to contribute to the overall validity of the instrument (Hatch et al., 1998). Coefficient alphas for the subscales were: External/Ritual .98, Internal/Fluid .74, Existential/Meditative .70, Humility/Personal Application .51.

Test-retest reliability was assessed using a 7-9 month period and sample of 22 rural patients and 16 professionals from prior sample (who had provided their addresses). Twenty-nine of the tests were returned. Stability coefficients were reported of Overall

.92; External/Ritual .91; Internal/Fluid .88; Existential/Meditative .88; Humility/Personal Application .64. Since factor four, Humility/Personal Application, had both lower test-retest reliability and lower Cronbach's alpha, there may be some concerns about its validity. Hatch et al. (1998) examined the item content and noted good face validity.

An orthogonal factor analysis was conducted by Hatch et al., (1998) on the original SIBS using the sample of family practice patients and professionals (n=83). A six-factor structure emerged, but two of those factors contained only one item and had low eigenvalues. Thus, those items were omitted and the analysis rerun. The second analysis yielded four clear factors (External/Ritual 9.52; Internal/Fluid 6.95; Existential/Meditative 3.55; Humility/Personal Application 3.98). Since many items loaded on two or more factors, Hatch et al. (1998) ran an oblique factor rotation to assess the degree of association between factors. The same structure was found as in the orthogonal rotation, with overlap between the External factor and the Internal factor, as well as between the External factor and the Existential factor (Hatch et al., 1998).

When administered to several different religious groups as well as a group of Atheists and Humanists, the SIBS was able to distinguish among groups. Further, no correlation with the Marlowe-Crown scale suggested that social desirability was not a factor in responses (Hatch, 2000). However, while the SIBS represented strong design, Hatch (2000) were concerned about clarity of negatively worded items and possibly that certain domains of spirituality were missing. Therefore, the scale was revised using focus groups.

The resulting SIBS-R had 39 items. Domains of spirituality covered on the SIBS-R include: "fulfillment, gratitude, hope, humility, joy, love, meditation, connection to

nature, prayer, relationship between spiritual health and physical health, relationship with someone who can provide spiritual guidance, serenity, service, spiritual experiences, spiritual growth, and spiritual writings” (Hatch, 2000, p. 3).

Hatch, (2000) reanalyzed data on the 39-item SIBS-R from two independent theses, with samples including medical students, elderly, and California nurses. Results revealed some overlap between factors three and four (Existential and Humility). In addition, the sample of elderly respondents felt the scale was too long. Thus, based on item-scale correlations, the 39-item scale was further shortened to the best 22 items. The 22-item scale showed a correlation with the 39-item version of .984, still maintaining all 4 factors/subscales (External/Ritual; Internal/Fluid; Existential/Meditative; Humility/Personal Application).

Hatch (2000) reanalyzed data using the 22-item SIBS-R. The sample came from pooled data of the studies using medical students, nurses and elderly. The coefficient alpha was .92, and correlation of the scale sums with the DUREL was .66-.80. Hatch (2000) noted that the SIBS-R was strongly related to religiosity but a significantly distinct construct.

A factor analysis (and we are currently guessing that this was done by Hatch (2000) and based on the samples of medical students, nurses and elderly) revealed four factors, which were subsequently labeled: Core spirituality (connection, meaning, faith, involvement, and experience), Spiritual perspective/Existential, Personal application/humility, and Acceptance/Insight (Hatch, 2000). Core spirituality includes items such as time for meditation and contemplation, having a personal relationship with a power greater than self, spiritual experiences that greatly changed one’s life, and being

grateful despite difficult times. Spiritual perspective, or Existential, refers to the ability to find meaning in times of hardship, and examining actions for their reflection of personal values. Personal application, or humility, is described as expecting nothing in return when one helps others, and focusing on what needs to be changed in self rather than in others. Acceptance, or insight, is defined as the ability to accept things that cannot be changed. The SIBS-R has a seven point Likert-scale, ranging from strongly agree to strongly disagree with a midpoint of neutral (Hatch, 2000). Negatively worded items are reversed and all items are the score circled by the subject. One question on the SIBS-R is a seven point scale that asks how spiritual a person one considers oneself to be.

Pilot testing of the revised version of the SIBS (SIBS-R), was done using a sample of recovering alcoholics (N=1168 adults and 25 adolescents). Higher scores were obtained in groups with longer sobriety. A subset of this sample completed a retest after 7 days and the reliability was .93 (Hatch, 2000).

Hatch et al. (1998) concluded that the SIBS offered advantages over other spiritual measures. By assessing aspects of spirituality not covered by other instruments, the SIBS is inclusive. The generic wording for spirituality avoids cultural and religious bias as much as possible. Finally, the SIBS acknowledged actions as important indicators of spiritual status (Hatch et al., 1998).

### **Expressions of Spirituality Inventory-Revised (ESI)**

The Expressions of Spirituality Inventory-Revised (ESI) is an empirically derived 30-item, paper and pencil self-report instrument that measures a five dimensional model of the expressions of spirituality: (1) Experiential/Phenomenological Dimension (EPD), (2) Cognitive Orientation Toward Spirituality (COS), (3) Existential Well-Being (EWB), (4) Paranormal Beliefs (PAR), and (5) Religiousness (REL). After an examination of

about 100 measures of spirituality, MacDonald (1997) concluded that there was no coherent picture of spirituality due to differences in operationalization of spirituality across instruments. Further, MacDonald (1997) noted that existing instruments were plagued by limits in validity, as well as in test and theory construction. The ESI was developed to incorporate theories across existing instruments, and provide a clear operationalization of spirituality.

Responses for the ESI-R are given on a five point response scale ranging from 0=strongly disagree to 4=strongly agree, with disagree, neutral, and agree in between. Reversed wording was kept to a minimum on the ESI-revised version due to feedback that those items presented difficulty for subjects whose first language was not English (except for items on the Existential Well-being Dimension, and one item on the Paranormal Beliefs Dimension) (MacDonald, 1997). Six items that represent each of the five dimensions can be summed to provide a total score for that dimension. The original 98-item version of the ESI took approximately 30 minutes to complete, yet no time for administration was reported for the ESI-R.

The ESI was developed using a two-stage process. MacDonald (1997) first examined the factor structure of existing measures using a series of principal factor analyses on eleven measures of spirituality and related constructs. Five hundred thirty four university undergraduates completed these surveys: Spiritual Assessment Scale (Howden, 1992); Index of Core Spiritual Experiences (Kass et al., 1991); Ego Grasping Orientation (Knoblauch & Falconer, 1986); Self Expansiveness Level Form (Friedman, 1983); Spiritual Orientation Inventory (Elkins et al., 1988); Transpersonal Orientation to Learning (Shapiro & Fitzgerald, 1989); Mystical Experiences Scale (Hood 1975);

Intrinsic Religious Motivation Scale (Hoge, 1972); East-West Questionnaire (Gilgen & Cho, 1979); Peak Experiences Scale (Mathes et al., 1982); and the Paranormal Beliefs Scale (Tobacyk & Milford, 1983). Six stable factors emerged: (1) Cognitive-Affective Orientation to Spirituality, (2) Experiential-Phenomenological Dimension, (3) Paranormal and Occult Beliefs, (4) Religiousness, (5) Existential Well-Being, (6) Products of Spirituality. An additional factor was found and labeled Styles/Techniques of Learning that involved manipulation of states of consciousness (MacDonald, 1997).

The second stage in MacDonald's (1997) process included a second order replication of the factor analysis of the findings from stage one, and development and validity of the ESI. A scale called the Supplementary Spirituality Scale was created from items in stage one in order to examine stage one data. Using items that belonged to a scale that contributed to a major factor in stage one, as well as items that produced the highest corrected-item-to-scale correlations for all items belonging to the same scale, MacDonald (1997) conducted a principal axis factor analysis based on information from 938 university students. A five factor solution emerged: (1) Experiential-Phenomenological; (2) Cognitive Orientation Toward Spirituality; (3) Paranormal and Occult Beliefs; (4) Existential Well-Being; (5) Traditional Religious Beliefs (Judeo-Christian). Styles and Techniques of Learning was excluded because it had limited theoretical significance. An item pool was then constructed to reflect the factors and a 218 item paper-and-pencil instrument was created. An additional dimension of spiritual identity was created to address identification with the spiritual (MacDonald, 1997).

Using 938 university students and "two quasi-randomly determined subsamples of 469 students" (MacDonald, 1997, p. 4), a principal factor analysis of the 218 items



resulted in five factor labels: (1) Cognitive Orientation Toward Spirituality, (2) Religiousness; (3) Experiential/Phenomenological; (4) Paranormal Beliefs; (5) Existential Well-Being. Products of Spirituality and Spiritual Identity loaded onto the Cognitive Orientation Toward Spirituality Dimension in all analyses. Items selected for the ESI included those that loaded .35 or higher on the expected factor, produced at least one stable factor loading in the item analysis within each individual dimension, and obtained a corrected item-to-scale correlation of .40-.80 for the dimension (MacDonald, 1997). Based upon these criteria, 98 items were retained and another principal axis factor analysis, using two split-sample analyses, revealed the same five factors as the 218-item scale.

MacDonald (1997) reported on the psychometric properties of the ESI based upon the prior sample of 938 university students. Reliability analyses demonstrated good reliability coefficients of .85 for EWB to .97 for COS ( $r=.91$  EPD;  $r=.91$  PAR;  $r=.94$  REL). Item-to-corrected dimension total score correlations ranged from .40 to .80 for all items (MacDonald, 1997). Product-moment correlations between the ESI dimensions and age and sex showed that neither age nor sex confounded results on the ESI. Product-moment correlations between ESI dimensions and measures of social desirability and response bias showed that all dimensions except Existential Well-Being were marginally correlated. Existential Well-Being was positively related to self-deception and negatively to admission of psychological disturbance (MacDonald, 1997). Factorial validity was investigated using a principal axis factor analysis with orthogonal and non-orthogonal rotation. Overlap was only found between Cognitive Orientation Toward Spirituality and Religiousness, but both were unique factors when obliquely rotated (MacDonald, 1997).

In comparing the ESI to other instruments measuring similar constructs (e.g., the Assessment Schedule for Altered States of Consciousness, ASASC; the Spiritual Well-Being Questionnaire, SWBQ; the Spiritual Well-Being Scale, SWBS; the Death Transcendence Scale, DTS; and the Ego Permissiveness Inventory, EPI), MacDonald (1997) found the dimensions of the ESI to have strong correlations with similar constructs. One-way ANOVAs were conducted across ESI dimensions to examine predictive validity for religious affiliation and involvement. Results were significant across all five dimensions for religious involvement, and across the three dimensions of Cognitive Orientation Toward Spirituality, Experiential-Phenomenological Dimension, and Religiousness for religious affiliation.

The five dimensions of spirituality on the ESI were derived through a series of factor analyses using eleven measures of spirituality and related constructs (MacDonald, 1997). MacDonald (1997) defined the constructs measured by each of the five dimensions in the ESI. The Cognitive Orientation Toward Spirituality measures a cognitive-perceptual aspect of spirituality, or the perception of spirituality as significant to personal functioning (MacDonald, 1997). Although the COS dimension is not overtly designed to assess religion, MacDonald (1997) found it highly related to religion. The Experiential/ Phenomenological Dimension measures experiential expressions and experiences of spirituality. The Existential Well-Being Dimension measures meaning and purpose, or “perception of self as competent and able to cope with difficulties of life and limitations of human existence” (MacDonald, 1997, p. 5). The Paranormal Beliefs Dimension measures beliefs of a psychological nature primarily, such as ESP and precognition. However, MacDonald (1997) also noted that this dimension includes some

beliefs in witchcraft or ghosts. The Religiousness dimension measures Judeo-Christian religious orientation best, but also intrinsic religiousness. The Religiousness dimension includes behavior and practices in addition to beliefs and attitudes.

The ESI-revised version was created from the 98-item version of the ESI in order to correct for reported problems with the ESI such as length, repetitiveness, and ease of understanding by participants whose first language was not English. Items with strong psychometric properties were selected, and repetition was almost eliminated. MacDonald (1997) reported that psychometric properties of the revised dimensions resembled the longer version, with good reliability and satisfactory validity. Correlations with other measures of spirituality were comparable to the original version. MacDonald (1997) reported specific reliability coefficients for the ESI-R ranging from .81 for the EPD to .89 for REL ( $r=.87$  COS;  $r=.81$  EPD;  $r=.80$  EWB;  $r=.82$  PAR;  $r=.89$  REL). Correlations with measures of spirituality and associated constructs (i.e., Assessment Schedule for Altered States of Consciousness, ASASC; the Spiritual Well-Being Questionnaire, SWBQ; the Spiritual Well-Being Scale, SWBS; the Death Transcendence Scale, DTS; and the Ego Permissiveness Inventory, EPI) were also comparable.

### **Data Analytic Procedure**

An exploratory factor analysis was conducted using the subscales for each of the health, wellness, and spirituality instruments. The factor analysis first will be used to consolidate factors with overlap, as well as to identify boundaries between distinctly different definitions. Next, results of the factor analysis will be used to identify those factors that most strongly represent the construct of holistic health. By clarifying a common, interdisciplinary language, the research literature can then begin to move

toward developing instruments specific to the assessment of holistic health, and to identify those indicators of health that relate most closely to positive health outcomes.

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Table 3-1. WEL-O: Life Tasks and Subtasks

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1. Spirituality
  2. Self-Direction/Regulation
    - Sense of Worth
    - Sense of Control
    - Realistic Beliefs
    - Emotional Responsiveness/Management
    - Intellectual Stimulation/Problem-Solving/  
Creativity
    - Sense of Humor
    - Exercise
    - Nutrition
    - Self-Care
    - Stress Management
    - Gender Identity/Identification
    - Cultural Identity/Identification
  3. Work and Leisure
    - Work
    - Leisure
  4. Friendship
  5. Love
-

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Table 3-2. WEL-J Wellness Factors and their Subscales

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1. Existential Self
    - Spirituality
    - Self-care
    - Gender Identity
    - Cultural Identity/ Identification
  2. Social Self
    - Friendship
    - Love
  3. Interactive Self
    - Intellectual Stimulation/Problem Solving/  
Creativity
    - Sense of Control
    - Sense of Humor
    - Work
    - Emotional Awareness/Responsiveness
  4. Physical Self
    - Exercise
    - Nutrition
  5. Intra-active Self
    - Leisure
    - Stress
    - Sense of Worth
    - Realistic Beliefs
-

## CHAPTER 4

### RESULTS

In order to examine the language of holistic health, six self-report instruments representing different fields of holistic health were administered to students at the University of Florida: the RAND Health Survey, the DUKE Health Survey, the Wellness Evaluation of Lifestyle, the Perceived Wellness Survey, the Spiritual Involvement and Belief Scale, and the Expressions of Spirituality Inventory. Participants for this study were selected from various undergraduate courses across disciplines of physical education, counselor education, recreation and leisure, sociology, and foundations of education. An exploratory factor analysis was performed at the subscale level of the six instruments to examine the overlap of language. The 6 instruments produced a total of 51 subscales. Consequently, data from 722 students were collected to generate at least 10 respondents per subscale.

#### **Descriptive Statistics**

Descriptive statistics were collected for all 51 subscales. On the Wellness Evaluation of Lifestyle, there were 17 subscales. The descriptive statistics can be seen in Table 4:1. Leisure had a range of 10 to 30 with a mean of 24.15 and a standard deviation of 3.69. Work had a range of 7 to 30, with a mean of 22.85, and a standard deviation of 3.69. Exercise had a range of 7 to 25, with a mean of 19.51 and a standard deviation of 4.13. Love had a range of 4 to 20, with a mean of 18.36 and a standard deviation of 2.25. Friendship had a range of 7 to 20, with a mean of 17.97 and a standard deviation of 2.06.

Spirituality had a range of 5 to 25 with a mean of 17.8, and a standard deviation of 4.58. Humor had a range of 8 to 20, with a mean of 16.96 and a standard deviation of 2.27. Sense of Self-worth had a range of 6 to 20 with a mean of 16.82 and a standard deviation of 2.49. Sense of Control had a range of 9 to 20, with a mean of 16.53 and a standard deviation of 1.97. Gender Identification had a range of 4 to 20, with a mean of 16.32 and a standard deviation of 2.45. Emotional Awareness/Responsiveness had a range of 6 to 20, with a mean of 16.27 and a standard deviation of 2.12. Intellectual Stimulation had a range of 8 to 20 with a mean of 15.99 and a standard deviation of 2.14. Self-care had a range of 2 to 20, with a mean of 15.80 and a standard deviation of 3.72. Stress Management had a range of 4 to 20, with a mean of 14.72 and a standard deviation of 3.15. Nutrition had a range of 4 to 20, with a mean of 13.63 and a standard deviation of 3.91. Realistic beliefs had a range of 5 to 24, with a mean of 13.13 and a standard deviation of 2.84. This is consistent with prior findings that the Realistic Beliefs scale is not highly correlated with wellness. Cultural Identity had a range of 3 to 15 with a mean of 11.41 and a standard deviation of 2.35.

The Rand Health Survey included 8 subscales. The physical functioning subscale had a range of 0 to 100, with a mean of 91.66 and a standard deviation of 17.94. The Role-limitations due to physical reasons had a range of 0-100, with a mean of 81.44 and a standard deviation of 31.16. The Role-limitations emotional had a range of 0 to 100, with a mean of 70.77 and a standard deviation of 39.02. The Energy/Fatigue subscale had a range of 5 to 100, with a mean of 57.26 and a standard deviation of 16.02. The Emotional Well-being subscale had a range of 16 to 100, with a mean of 70.19 and a standard deviation of 15.81. The Social functioning subscale had a range of 12.5 to 100, with a



mean of 80.03 and a range of 20.72. The Pain subscale had a range of 0 to 100, with a mean of 80.58 and a standard deviation of 18.55. The General health subscale had a range of 5 to 100, with a mean of 71.48 and a standard deviation of 18.67. The descriptive statistics can be seen in Table 4:2.

The Spiritual Involvement and Belief Scale included four subscales. The Core Spirituality subscale had a range of 1 to 7, with a mean of 4.61 and a standard deviation of 1.23. The Spiritual Perspective/Existential subscale had a range of 2.2 to 7, with a mean of 5.36 and a standard deviation of .85. The Personal Application/humility subscale had a range of 1 to 7 with a mean of 5.19, and a standard deviation of 1.05.

The Acceptance/Insight subscale had a range of 1 to 7, with a mean of 5.11 and a standard deviation of 1.25. The descriptive statistics can be seen in Table 4:3.

The Duke Health Survey included 11 subscales. Physical health had a range of 10 to 110 with a mean of 74.50 and a standard deviation of 18.12. The Mental health subscale had a range of 0 to 100, with a mean of 57.12 and a standard deviation of 14.29. Social health had a range of 10 to 100, with a mean of 43.95 and a standard deviation of 12.24. General health had a range of 13.33 to 100, with a mean of 58.52 and a standard deviation of 9.48. Perceived health had a range of 0 to 100, with a mean of 82.77 and a standard deviation of 25.74. Self-esteem had a range of 0 to 100, with a mean of 58.08, and a standard deviation of 12.21. Anxiety had a range of 0 to 91.66, with a mean of 43.89, and a standard deviation of 13.76. Depression had a range of 0 to 100, with a mean of 48.26, and a standard deviation of 15.04. Anxiety-depression had a range of -7.14 to 92.86 with a mean of 40.76, and a standard deviation of 14.00. Pain had a range of .00 to 100 with a mean of 33.28, and a standard deviation of 31.42. Finally, Disability had a

range of .00 to 100, with a mean of 7.35, and a standard deviation of 18.48. The descriptive statistics for the subscales are in Table 4:4.

The Perceived Wellness Survey included 6 subscales. Psychological wellness had a range of 1.67 to 6, with a mean of 4.61, and a standard deviation of .78. Emotional wellness had a range of 1.5 to 6, with a mean of 4.42, and a standard deviation of .85. Social wellness had a range of 2.17 to 6 with a mean of 4.96, and a standard deviation of .72. Physical wellness had a range of 1.17 to 6, with a mean of 4.46 and a standard deviation of .88. Spiritual wellness had a range of 1.83 to 6 with a mean of 4.65, and a standard deviation of .77. Intellectual wellness had a range of 1.67 to 6, with a mean of 4.60 and a standard deviation of .68. Descriptive statistics for the Perceived Wellness Survey can be seen in Table 4:5.

The Expressions of Spirituality Inventory included 5 subscales. Cognitive had a range of 0 to 4 with a mean of 2.60 and a standard deviation of .91. Experiential spirituality had a range of .00 to 4 with a mean of 1.82 and a standard deviation of .89. Existential spirituality had a range of .17 to 4.00, with a mean of 2.8 and a standard deviation of .71. Paranormal spirituality had a range of .00 to 4.0 with a mean of 1.55 and a standard deviation of .78. Religiousness had a range of .00 to 4.00, with a mean of 2.61 and a standard deviation of .96. Descriptive statistics for the Expressions of Spirituality Inventory subscales can be seen in Table 4:6.

### **Demographic Data Analysis**

The sample for this study consisted of individuals primarily between the ages of 18 and 25 ( $n=697$ , 96.5%), with most identifying themselves as full-time students ( $n=696$ , 96.4%) and working on an undergraduate degree ( $n=704$ , 97.5%). A majority of the sample reported their highest level of education completed as high school ( $n=416$ ,

57.6%), with the next largest group with an associate's degree (n=261, 36.1%). The students reported that they were either not working (n=392, 54.3%), or working only part-time (n=301, 41.7%). Most participants reported that they did not live alone (n=633, 87.7%), and were single (n=707, 97.9%).

Other than student status, demographics were collected concerning individual make-up of participants. Almost three-fourths of the participants were female (n=535, 74.1%), and three quarters of all participants were Caucasian/White (n=539, 74.7%). Other cultural backgrounds that constituted more than 2 people were: African American/Black (n=66, 9.1%), Asian or Pacific Islander (n=62, 8.6%), and Native American/Eskimo (n=29, 4%), and Hispanic/Latino (n=9, 1.2 %).

Demographics were also collected concerning religion and spirituality. Self-ratings about the strength of participants' religious beliefs were moderate, with most students indicating a 3 (n=228, 31.6%) on a scale where 1 is "not at all religious", and 5 is "very religious". The next largest group reported slightly higher strength in their religious beliefs at a four on the scale (n=195, 27%), with slightly lower strength of two being the next most common response (n=125, 17.3%). Representing the extreme ends of strength in religious beliefs, a one or a five on the scale, were 86 students on both ends, or 11.9% each. Only 2 responses of the 722 were missing. The most commonly reported religious belief system was Catholicism (n=215, 29.8%). Other frequently noted religious belief systems were Judaism (n=87, 12%), Baptist (n=81, 11.2%), No affiliation (n=79, 10.9%), Nondenominational (n=63, 8.7%), United Methodist (n=53, 7.3%), and Presbyterian (n=44, 6.1%). While most students reported moderate strength of religious beliefs (n=228, 31.6%), more students (n=229, 31.7%) reported above average strength in their

sense of spirituality on a scale of one (“not at all”) to five (“very spiritual”). An average strength in spirituality was a near second in ranking by 225 students (31.2%). However, the third most common rating was a 5 (“very spiritual”) by 131 students (18.1%). Ratings of 2 and 1 were indicated by 93 (12.9%) and 44 (6.1%) students. Thus, the ratings for spirituality were at the higher end, with 80% noting a 3 or above, while the ratings for strength of religious beliefs were slightly lower with only 70.5% at 3 or above. Of the participants, 60% (n=433) reported having had an experience they would call spiritual. Another 19% (n=137) were unsure, and only 21.1% (n=152) reported that they had not had an experience they would call spiritual.

Finally, demographics about health were collected. When asked how many visits to a health care professional they had in the last year, participants most commonly reported between one and six visits (n=409, 56.6%). Another 208 students (28.8%) noted that they had less than one visit. The number with no visits to the doctor and over 6 visits were closely split (n=50, 6.9% and n=55, 7.6% respectively). The majority of the participants reported that they had no chronic health problems (n=523, 72.4%). Of the 27.6% indicating chronic health problems, the most common problems included: asthma (n=19, 2.6%), anxiety (n=15, 2.1%), back pain (n=14, 1.9%), asthma and allergies (n=8, 1.1%), and depression (n=8, 1.1%). Most of the participants rated their health as a 4 out of 5, where 1 is “poor” and 5 is “excellent” (n=311, 43.1%). Rating health as “excellent” was a close second with 306 students giving this response (42.4%). Overall, 85.6% of students felt their health was better than average.

### **Principal Components Factor Analysis**

The initial principal components factor analysis of the 51 subscales yielded 12 factors with eigenvalues of 1.0 or above, and accounting for 67.55% of the variance.

However, within the 12 factors, there was a clear split between factors that fell below 2.0 and above. Factor 5 had an initial eigenvalue of 2.042, while Factor 6 had an initial eigenvalue of 1.665. Yet, Factor 7 had an eigenvalue of 1.576, and is a much smaller drop than from Factor 5 to 6. Therefore, the five factors with eigenvalues at 2.0 and above were extracted and the factor analysis was run once again.

The factors identified in the 5-Factor solution yielded eigenvalues of 12.07, 5.26, 3.36, 2.59, and 2.04 respectively from factors one to five (see Table 4:7). They accounted for 49.68% of the variance explained. The 5 factors were then rotated using a varimax rotation with Kaiser Normalization on SPSS. Variables that loaded at a .40 or above on any of the 5 factors were maintained as significant to that factor (see Appendix H for the full illustration). Several variables loaded on two factors at or above .40.

#### **Factor 1: Environmental Engagement**

The first factor was labeled Environmental Engagement. Nineteen subscales loaded onto factor one at .40 or above. Thirteen subscales were from the Wellness Evaluation of Lifestyle instrument: Sense of Control (.742), Sense of Worth (.648), Intellectual Stimulation and Problem-Solving (.701), Work (.682), Friendship (.666), Leisure (.636), Gender Identification (.619), Emotional Responsiveness/Expressiveness (.594), Humor (.561), Exercise (.537), Love (.500), Nutrition (.496) and Stress Management (.481). One subscale, Intellectual Wellness (.555), from a second instrument, the Perceived Wellness Survey, also loaded onto this first factor. In deciding upon a label for this first factor, the loading of intellectual stimulation from two different instruments (i.e., the WEL and the PWS) was a significant influence. The definitions of both subscales emphasized being energized by an optimal amount of intellectual stimulation. This language became part of the decision-making for Factor one's label by including a seeking out or active

engagement with one's environment. Several other subscales from the Wellness Evaluation of Lifestyle instrument reinforced the concept of engaging with the environment, including: Work, Friendship, Exercise, Love, and Leisure. All of these subscales had definitions about an individual's involvement with other people, work, and activities.

Four other subscales loaded onto Factor one and influenced the decision for a label: Humor, Stress management, Nutrition, and Gender Identity. The definitions of these last few subscales had terms such as ability to use positive humor, ability to minimize stress, eating and drinking habits, and confidence with one's gender identity. In addition, the Intellectual Stimulation subscale was actually labeled Intellectual Stimulation/Problem-Solving/Creativity, and it included definitions that emphasized involvement with the environment such as being open-minded, curious, flexible and creative. Within all of these final subscales was a reference to positive involvement. Thus, the definitions loading onto Factor 1 included themes of being involved with and stimulated by one's environment, and further, taking a positive, flexible, healthy approach toward oneself in the environment. Therefore, this first factor was labeled Environmental Engagement.

There were 5 subscales that loaded at .40 and above on Factor 1, but also cross-loaded higher onto Factor five. Four of the five subscales were from a wellness instrument (i.e., the Perceived Wellness Survey). The 4 factors that loaded more heavily onto Factor 5 were: Psychological wellness (.432 on 1 versus .638 on factor 5), Emotional wellness (.506 on 1 versus .577 on 5), Social wellness (.439 on 1 versus .503 on 5), and Spiritual wellness (.455 on 1 versus .602 on 5). The only scale to load onto Factor one from the Perceived Wellness Survey was the Intellectual Wellness subscale,

indicating that the intellectual dimension of wellness is a strong part of Factor 1. The fifth subscale that cross-loaded onto another factor was Existential spirituality from the Expressions of Spirituality Inventory (.444 on 1 versus .672 on 5). Existential Spirituality also loaded onto Factor 5. Although, the Perceived Wellness Survey loaded higher onto Factor five, its wellness concepts support the theme of environmental engagement for factor one because wellness is defined by taking responsibility for one's health, and a high level of wellness across multiple areas of one's life.

The fact that subscales from two separate wellness instruments loaded onto different factors, underscores the confusion resulting from various definitions in the field of wellness. The separate loadings can be explained by the more detailed definition in the Wellness Evaluation of Lifestyle. The WEL included 17 factors of wellness instead of the six identified by the PWS (intellectual, social, psychological, physical, emotional, and spiritual). The wellness factors that loaded onto Factor 1 from the WEL were the specific terms referring to environment or attitude toward the environment, while the four factors that loaded higher onto Factor 5 were from the Perceived Wellness Survey and included broad definitions of wellness.

## **Factor 2: Psychosomatic Expression**

The second factor to emerge in the five-factor solution was given the label Psychosomatic Expression because its subscales were all from one health survey, i.e., the Duke Health Profile, and included language about the physical symptoms of affect. The term psychosomatic has been used in the medical field to refer to the connection between the mind (psycho) and the body (soma). Specifically, as noted in Chapter 2 of this dissertation, psychosomatic medicine introduced the concept that disease is influenced by both psychological and physical factors (Brannon & Feist, 1997). Eight subscales loaded

onto Factor 2 at .40 or above. From highest to lowest loading the subscales included: Anxiety-Depression (-.865), General health (.847), Anxiety (-.840), Depression (-.800), Mental health (.793), Self-esteem (.647), and Social health (.403). The negative loadings reflect the Duke's emphasis on positive and negative health symptoms.

The subscales that loaded onto Factor 2 were only those subscales from the Duke that had definitions about mood or affect. For instance, Anxiety is defined by feelings of being comfortable around people, happy with family relationships, and not easy to get along with. The Self-Esteem subscale is defined by liking oneself, giving up too easily, and getting along with others. However, the definitions from the Duke were distinct from other psychologically-related definitions in this study by their unique emphasis on language about physical symptoms of mood such as sleep, concentration and fatigue. For example, the Depression subscale's definition involves liking oneself, giving up too easily, depressed feelings, and sleep and fatigue. Mental health is defined by depressed feelings, nervousness, concentration, liking oneself, and giving up too easily. Anxiety-depression combines both the anxiety and depression definitions. Similarly, General Health combines mental, social, and physical subscales.

Each of the subscales on Factor 2 reflect mood. Even though Social Health would seem different from the theme of affect, the definition of this subscale includes social self-esteem, including: not easy to get along with, comfortable around people, and happy with family relationships. Thus, it was decided that Factor 2 included a theme of affective acceptance, as well as affective threat (i.e., not easy to get along with, and mental health with depressed feelings, nervousness, and giving up easily). It also included a theme of



the physical expressions of mood (i.e., fatigue and nervousness). A final label of Psychosomatic Expression was given to Factor 2.

One subscale (i.e. Physical Health) loaded higher onto Factor 3 (.714 on Factor 3 versus .431 on Factor 2). The Physical Health subscale of the Duke is defined by physical symptoms such as sleeping and fatigue, and is consistent with the somatic symptoms indicated by depression (also sleep and fatigue).

### **Factor 3: Physical Functioning**

The third factor to emerge from the five-factor solution included subscales that all related to a physical theme, and was therefore given the label Physical Functioning. Eleven subscales with loadings above .40 were included in Factor 3. The subscales were from the Rand Health Survey, the Duke Health Profile, and a physical subscale from the Perceived Wellness Survey. In order from strongest loading to weakest, the subscales loaded as follows: Physical Health (Duke, .714); Physical Wellness (Perceived Wellness Survey, .687), General Health (Rand, .677); Pain (Rand, .616); Pain (Duke, .548); Role-limitations due to Physical Reasons (Rand, .532); Perceived health (Duke, .526); Energy/fatigue (Rand, .464); Social Functioning (Rand, .446); Disability (Duke, .406); and General Health (Duke, .400). The strength of physical subscales loading in this factor led clearly to the label of Physical Functioning for Factor 3.

The one, seemingly different subscale is Social Functioning. The Rand's definition of Social Functioning refers to physical or emotional problems that interfere with normal social activities. Unlike other definitions about social functioning that emphasize social relationships, the Rand Health Survey emphasizes the presence of physical factors that can interfere with the social aspect of life, which was still consistent with a physical label on Factor 3.

The one subscale from Factor 3 that cross-loaded higher onto another Factor was the General Health subscale from the Duke instrument. The General Health subscale loaded higher onto Factor 2 (.847) versus Factor 3 (.400). Even though a General health subscale from the Rand Health Survey loaded onto Factor 3 without cross-loading, there is a difference between the Duke's definition of general health and the Rand's definition of general health. The Duke General Health subscale is a combination of its physical, mental, and social subscales, which emphasized affective dimensions and probably contributed to the higher loading on Factor 2. The General Health subscale on the Rand however, refers to a rating of one's own health and expectations of one's own health. Again, it is evident that the language used to define terms with the same label can differ significantly. In this case, two subscales of general health loaded onto separate factors.

#### **Factor 4: Spiritual Connection**

The fourth factor that emerged in the five-factor solution was labeled Spiritual Connection. Six subscales loaded onto Factor 4 (with no cross-loadings onto other factors), including in descending order of loading: Core Spirituality from the Spiritual Involvement and Beliefs Scale (.924), Cognitive Orientation from the Expressions of Spirituality Inventory (.913), Religiousness from the Expressions of Spirituality Inventory (.879), Spirituality from the Wellness Evaluation of Lifestyle (.878), Experiential/Phenomenological from the Expressions of Spirituality Inventory (.685), and the Personal Application and Humility from the Spiritual Involvement and Beliefs Scale (.406).

Since spirituality has been defined with a broad variety of definitions, the label for this scale was carefully selected to reflect only the definitions that loaded onto Factor 4. From strongest loadings to weakest were definitions such as practice and belief that

spirituality is important to being fulfilled and relationship with a higher power; spirituality as important to personal functioning; religious beliefs, behaviors and practice; beliefs and behavior practiced from hope and optimism to prayer and meditation; expressions such as peak and transcendental spirituality; and giving help without expecting anything in return, and focusing on change in oneself versus others. It was decided that all of these definitions emphasized a connectedness with something greater than oneself. Thus, factor 4 was labeled Spiritual Connection.

#### **Factor 5: Purpose and Resiliency**

The fifth factor that emerged from the 5-factor solution was labeled Purpose and Resiliency due to the prevalence of definitions that referred to a sense of purpose about life and a resiliency that is associated with that purpose. Eight subscales loaded onto Factor 5. The eight subscales were: Existential Well-Being (Expressions of Spirituality Inventory, .672), Psychological Wellness (Perceived Wellness Survey, .638), Spiritual Wellness (Perceived Wellness Survey, .602), Emotional wellness (Perceived Wellness Survey, .577), Emotional Well-Being (Rand, .534), Social Wellness (Perceived Wellness Survey, .503), Realistic Beliefs (Wellness Evaluation of Lifestyle, .502), and Intellectual Wellness (Perceived Wellness Survey, .408).

The primary influence on the label for Factor 5 was the language of meaning and purpose in the definition of the highest loading subscale (i.e., Existential well-being), and also in the definition for the Spiritual Wellness subscale. In addition, the Existential well-being subscale included language about resiliency that was accentuated by other subscales on Factor 5 that emphasized a sense of security and being valued. For instance, the Psychological wellness subscale was defined by optimism and an expectation for positive outcomes. The Emotional Wellness subscale on the Perceived Wellness Survey

included language such as secure self-identity, and positive self-regard. The Social wellness subscale on the Perceived Wellness Survey included language such as perception of available support and of being a valued support provider. The Realistic Beliefs subscale of the Wellness Evaluation of Lifestyle included language such as ability to accept oneself as imperfect. The language of valuing self and being valued was consistent with a person who has a sense of meaning and purpose in their lives. One subscale (e.g., Emotional Well-Being) from a health instrument loaded onto Factor 5. This subscale was defined by language such as feelings of being calm and peaceful, and consequently it also reinforced the theme of purpose and resiliency.

Even though some of these final subscales seem to indicate emotions similar to the subscales of Factor 2 (Affect), it is interesting to note that they loaded onto a separate Factor. The difference is that the definitions of emotions and beliefs in Factor 5 seem to reflect more optimism and security rather than the affect or mood of Factor 2. It is also interesting to note that two spirituality subscales loaded onto this fifth factor rather than the fourth factor that almost exclusively had spirituality subscales. However, the difference on factor five was that the existential component of spirituality loaded separately, and without cross-loadings. Thus, the fifth factor was labeled Purpose and Resiliency.

The one factor from Factor 5 that cross-loaded onto another Factor was the Intellectual Wellness subscale of the Perceived Wellness Survey (PWS). Intellectual Wellness loaded higher onto Factor 1 (.555) versus Factor 5 (.408). Intellectual Wellness was defined on the PWS as perception of being energized by optimal intellectually

stimulating activity. This subscale was consistent with other definitions on Factor 5 that describe a person who is intrinsically motivated by purpose.

Table 4-1. Descriptive Statistics for the Wellness Evaluation of Lifestyle

Subscale	Range	Mean	Standard Deviation
Leisure	10 – 30	24.15	3.69
Work	7 – 30	22.85	3.69
Exercise	7 – 25	19.51	4.13
Love	4 – 20	18.36	2.25
Friendship	7 – 20	17.97	2.06
Spirituality	5 – 25	17.81	4.58
Humor	8 – 20	16.96	2.27
Sense of Worth	6 – 20	16.82	2.49
Sense of Control	9 – 20	16.53	1.97
Gender Identity	4 – 20	16.32	2.45
Emotional Responsiveness/ Expressiveness	6 – 20	16.27	2.12
Self-Control	2 – 20	15.80	3.72
Intellectual Stimulation	8 – 20	15.99	2.14
Stress Management	4 – 20	14.72	3.15
Nutrition	4 – 20	13.63	3.91
Realistic Beliefs	5 – 24	13.13	2.84
Cultural Identity	3 – 15	11.41	2.35

Table 4-2. Descriptive Statistics for the Rand Health Survey

Subscale	Range	Mean	Standard Deviation
Physical functioning	0 – 100	91.66	17.94
Role-limitations Physical	0 – 100	81.44	31.16
Pain	0 – 100	80.58	18.55
Social functioning	12.5 – 100	80.03	20.72
General health	5 – 100	71.48	18.67
Role-limitations Emotional	0 – 100	70.77	39.02
Emotional Well-Being	16 – 100	70.19	15.81
Energy/fatigue	5 – 100	57.26	16.02

Table 4-3. Descriptive Statistics for the Spiritual Involvement and Beliefs Scale

Subscales	Range	Mean	Standard Deviation
Core Spirituality	1 - 7	4.61	1.23
Spiritual Perspective/ Existential	2.2 - 7	5.36	.85
Personal Application/ Humility	1 - 7	5.19	1.05
Acceptance/ Insight	1 - 7	5.11	1.25

Table 4-4. Descriptive Statistics for the Duke Health Survey

Subscales	Range	Mean	Standard Deviation
Perceived health	0 - 100	82.77	25.74
Physical health	10 - 110	74.50	8.12
General health	13.33 - 100	58.52	9.48
Self-esteem	0 - 100	58.08	12.21
Depression	0 - 100	48.26	15.04
Social health	10 - 100	43.95	12.24
Anxiety	0 - 91.66	43.89	13.76
Anxiety-Depression	-7.14 - 92.86	40.76	14.00
Pain	0 - 100	33.28	31.42
Disability	0 - 100	7.35	18.48

Table 4-5. Descriptive Statistics for the Perceived Wellness Survey

Subscales	Range	Mean	Standard Deviation
Social wellness	2.17 - 6	4.96	.72
Spiritual wellness	1.83 - 6	4.65	.77
Psychological Wellness	1.67 - 6	4.61	.78
Intellectual wellness	1.67 - 6	4.60	.68
Physical wellness	1.17 - 6	4.46	.88
Emotional Wellness	1.5 - 6	4.42	.85

Table 4-6. Descriptive Statistics for the Expressions of Spirituality Inventory Subscales

Subscales	Range	Mean	Standard Deviation
Religiousness	0 - 4	2.61	.96
Cognitive Spirituality	0 - 4	2.60	.91
Existential spirituality	.17 - 4.0	2.8	.71
Experiential spirituality	0 - 4	1.82	.89
Paranormal spirituality	0 - 4	1.55	.78

Table 4-7. The 5-Factor Solution and Eigenvalues

Factor Number	Eigenvalue
Factor 1	12.07
Factor 2	5.26
Factor 3	3.36
Factor 4	2.59
Factor 5	2.04

## CHAPTER 5 DISCUSSION

The purpose of this study was to respond to a need for a common lexicon in the area of holistic health. The definition of health has undergone a transformation, as in all of science, from an elementalist perspective toward one that is more holistic. The recent holistic conceptualizations of health are more complex and include both inconsistency in definitions and number of factors. Consequently, empirical studies on holistic health have been fragmented in their conclusions because each used different definitions of the relevant constructs. The purpose of this study was to conduct an exploratory factor analysis to identify those factors that most strongly represent the construct of holistic health. By clarifying the uniqueness of health-related subscales, the results of this study will allow future researchers to identify those indicators of health that relate most closely to positive health outcomes and to develop instruments specific to the assessment of holistic health.

The procedure for this study involved developing a packet of instruments related to holistic health that would be administered to college students in undergraduate courses. Two instruments from the three fields that have shaped the evolving definition of health (i.e., health, wellness, and spirituality) were included in this study. These instruments were: the Rand 36-item Health Survey (Hays, Sherbourne, and Mazel, 1993) and the Duke Health Profile (Parkerson, 1999); the Wellness Evaluation of Lifestyle form TJ-2 (Hattie, Myers & Sweeney, in press) and the Perceived Wellness Survey (Adams, Bezner & Steinhardt, 1997); and the Spiritual Involvement and Beliefs Scale-Revised (Hatch,



Burg, Naberhaus & Hellmich, 1998) and the Expressions of Spirituality Inventory (MacDonald, 1997). These six instruments incorporated a total of 51 subscales. The instruments were administered as a single packet to a sample of 722 students at the University of Florida who were enrolled in undergraduate courses across multiple disciplines.

A principal components factor analysis was used to empirically analyze the data. It yielded 12 factors with eigenvalues above 1.0. However, because there was a clear split between the factors that fell below 2.0, the five factors with eigenvalues above 2.0 were extracted. A second, restricted factor analysis with those five factors confirmed the 5-Factor solution. Out of the 51 subscales in the 5-Factor solution, only those that loaded at .40 or above, after the varimax rotation, were retained as part of each factor.

The principal components that emerged from an initial list of 51 subscales representing holistic health, clustered into a 5-Factor solution: Environmental Engagement (Factor 1), Psychosomatic Expression (Factor 2), Physical Functioning (Factor 3), Spiritual Connection (Factor 4), and Purpose and Resiliency (Factor 5). None of these factors included more than 19 subscales individually, and together, they only incorporated 44 of the original 51 subscales. Environmental Engagement was narrowed from 51 to 19 subscales. Psychosomatic Expression was narrowed from 51 to 8 subscales. Physical Functioning was narrowed from 51 to 11 subscales. Spiritual Connection was narrowed from 51 to 6 subscales. Purpose and Resiliency was narrowed from 51 to 8 subscales.

### **Conclusion and Implications**

The 5-Factor solution suggests a common language for holistic health by distinguishing the fine differences among the definitions and offering labels that capture

those differences. There are two compelling findings that were found in the 5-Factor solution. First, constructs (e.g., health, wellness, and spirituality) previously treated as unidimensional, in the research literature, separated across factors. Wellness was predominately represented on Factor 1 (Environmental Engagement) and Factor 5 (Purpose and Resiliency). Health was predominately represented on Factor 2 (Psychosomatic Expression) and Factor 3 (Physical health). Spirituality was predominately represented on Factor 4 (Spiritual Connection) and Factor 5 (Purpose and Resiliency).

The second finding in the 5-Factor solution is the clarification regarding similar labels on subscales that have subtle differences in their definitions. These results shed light on the problem of fragmented language and meanings across instruments as fields have expanded toward more holistic and inclusive definitions. The two findings will be discussed together below as part of each Factor. The term subscales will be used in the following discussion when subscales are identified in conjunction with their source instrument. The term definitions will be used for the term subscales when the subscales are being identified as a set of definitions within the new Factor structure.

### **Factor 1: Environmental Engagement**

The subscales that loaded onto Factor 1 indicated a construct that is characterized by an individual's interactions with their environment, both internal and external. This was most apparent in the loading of almost all of the wellness subscales used in this study on Factor 1. The omnibus definition of wellness in the literature has been optimal health in all dimensions of an individual's life, as well as taking responsibility for one's own well-being. However, more holistic definitions of wellness have created some complexity within the omnibus definition. For instance, researchers have moved from the original six

dimensions of wellness (Hettler, 1984) to as many as seventeen (Hattie et al., in press). Factor 1 in this study gives an interesting insight into where we are with the most recent definitions of wellness. Specifically, Factor 1 indicates a distinction between internal and external definitions of wellness.

Wellness subscales predominantly represented Factor 1. Of the 20 subscales that loaded onto Factor 1, nineteen of them were from the wellness surveys used in this study. However, while all of the subscales from the Wellness Evaluation of Lifestyle (WEL) that loaded onto Factor 1 did not load onto any other factor, all of the subscales from the Perceived Wellness Survey (PWS) that loaded onto Factor 1 did load onto Factor 5 (Meaning and Purpose). Further, the subscales from the WEL were among the highest loadings on Factor 1. The fact that two wellness instruments assessed different constructs suggests that there is an important distinction in the definitions. The subscales of the WEL that loaded only onto Factor 1 had an emphasis on the external environment. For instance, Intellectual Stimulation and Problem-Solving (.701) from the WEL was defined as being curious, open-minded, and using one's creative capacities. Work (.682) from the WEL was defined as the perception that one's skills are used effectively and work is within one's control. Leisure (.636) from the WEL was defined as activities for intrinsic satisfaction. Even Emotional Expressiveness (.594) from the WEL was defined in terms of the external, which is, expressing a wide range of emotions. Thus, each of these definitions emphasizes a role or interaction that individuals have in the environment, and their sense of satisfaction from that interaction. The definitions from these subscales could even be described as presenting some measure of risk that comes from being engaged with the environment.

In contrast, the subscales from the PWS that loaded onto both Factors 1 and 5 had more of an emphasis on internal reactions and experiences. In fact, Adams, et al. (1997) designed the PWS specifically to tap perceptions that they believed preceded behaviors and would better indicate wellness. For example, Psychological wellness (.638 on Factor 5 versus .432 on Factor 1) from the PWS was defined as optimism and expectation for positive outcomes. Emotional Wellness (.577 on Factor 5 versus .506 on Factor 1) was defined as secure self-identity and positive self-regard. Social Wellness (.503 on Factor 5 versus .439 on Factor 1) from the PWS was defined as the perception of social support and of being a valued support provider. All of these definitions overlap to some extent with those from the WEL by addressing the omnibus definition of high levels of wellness across dimensions of the individual. However, the definitions of the subscales from the PWS cross-loaded and indicated a division under the omnibus definition of wellness (e.g., internal versus external).

Not only were the wellness subscales from the PWS the only ones to cross-load, they also loaded higher onto Factor 5 with the exception of 1 subscale. That subscale was Intellectual Wellness that loaded at .408 onto Factor 5 and .555 onto Factor 1. This one subscale of the PWS that loaded higher onto Factor 1 underscored the distinction between the external natures of wellness on Factor 1 versus those wellness definitions on Factor 5. Intellectual Wellness from the PWS was defined as being energized by intellectually stimulating activity. This definition was very similar to the definition of Intellectual Stimulation from the WEL that loaded as the second highest subscale on Factor 1. Again, there is some overlap in the field of wellness. Yet, Factor 1 was labeled Environmental

Engagement to capture the distinction between the external definitions that loaded more strongly onto Factor 1 and the internal definitions that cross-loaded higher onto Factor 5.

Another illustration of the division between internal and external wellness on Factor 1 was observed by the separation of two wellness subscales labeled spirituality. The Spiritual Wellness subscale from the PWS loaded onto both Factors 1 and 5. However, Spirituality from the WEL loaded only onto Factor 4 (Spiritual Connection). The difference in the two definitions was a distinction between internal and external definitions of spirituality. For instance, Spiritual Wellness from the PWS was defined as perception of meaning and purpose (internal). Yet, the Spirituality subscale from the WEL, was defined as awareness of being that transcends material aspects of life and gives a sense of wholeness or connectedness with the universe. This division between internal and external definitions again demonstrates an important distinction in definitions overall. The failure of an external definition of spirituality to load with other wellness subscales indicates a possible alternative way to consider the omnibus definition of wellness. Although spirituality has been a consistent part of many models of wellness, it is possible that certain definitions of spirituality more accurately represent a construct distinct from wellness. It was for this reason that Environmental Engagement was chosen as a label for Factor 1 instead of the wellness, specifically to capture a unique construct or indicator within the omnibus definition of wellness.

A third clarifying issue about Factor 1 and its contribution to the omnibus definition of wellness was the separate loadings of physically related definitions of wellness subscales. Two subscales from the WEL (e.g., Exercise and Nutrition) loaded onto Factor 1. Both of these subscales had definitions that emphasized the external nature

of wellness on Factor 1. Exercise was defined as systematic activity with the intent of improved health or physical performance. Nutrition was defined as eating and drinking habits. Hattie, et al. (1998) paired these two subscales together to form one physical factor in their wellness instrument. In contrast to the subscales from the WEL, the Physical wellness subscale from the PWS had much more of an internal emphasis. Physical wellness from the PWS was defined with as positive perception and expectation for physical health. Again, there is a clear division between internal and external definitions. As with spirituality, there is also an important distinction under the umbrella definition of wellness. Whereas the physical dimension has always been a part of wellness, Factor 1 provides an alternative way of viewing wellness. Specifically, it suggests that external habits (e.g., exercise and nutrition) coincide with other external definitions of wellness, and even overlap to some extent with internal definitions of wellness. However, internal perceptions and expectations about physical health were distinctly different from any other wellness definitions. The label of Environmental Engagement on Factor 1 allows researchers to see these types of differences within the omnibus definition of wellness.

Finally, two wellness subscales (e.g., Self-Care and Cultural Identity from the WEL) did not load as expected with the other wellness subscales on Factor 1. In fact, these two subscales from the WEL failed to load with any factors in the 5-Factor Solution. Self-Care, defined as preventative habits and remedial care, would seem to have been similar to Factor 1 with the emphasis on external habits. However, the failure of Self-care to load onto Factor 1 with its emphasis on habits relating to self rather than interactions with the environment reinforces the environmental interaction and risk aspect

of the definitions in Factor 1. The absence of Cultural Identity (defined as acceptance and pride in the benefits of one's culture) on Factor 1 is also consistent with the external focus of Factor 1. However, it is interesting to note that Gender Identity from the WEL did load onto Factor 1 significantly (.619). Gender Identity was defined as satisfaction and confidence in one's gender identity. The loading of Gender Identity on Factor 1 versus the absence of Cultural Identity poses an important distinction between these two definitions that could be considered more closely in future research. It is interesting to note that all three of these subscales were combined with the spirituality subscale from the WEL to form one factor called Existential Self in a study by Hattie et al. (in press). The separation of these four definitions in this 5-Factor Solution offers an important contribution to the discussion about wellness in the context of holistic health.

When researchers are considering important indicators of holistic health, they may be oversimplifying the area of wellness by selecting only one instrument. The loadings, and absence of loadings, on Factor 1 illustrate the need for researchers to consider subtle distinctions in definitions and select (or develop) measures that will assess the indicator that is appropriate for their study.

## **Factor 2: Psychosomatic Expression**

The subscales that loaded onto Factor 2 indicated a construct that is characterized by an individual's mental health and related physical symptoms of mental health. This was most apparent by the loading of subscales that all came from a health survey. However, Factor 2 indicates an important distinction under the omnibus definition of health. Just as wellness separated into two primary areas of internal and external wellness, internal definitions of health loaded onto Factor 2 while external definitions were primarily represented on Factor 3 (Physical functioning). Similar to the wellness

field, expansions toward more holistic definitions of health have led to complexity within the omnibus definition. For instance, researchers have included models that ranged from five dimensions (Neuman, 1989) to three (Miller & Thoresen, 1999). Factor 2 in this study gives an insight into the most recent definitions of health. Factor 2 predominantly incorporates the subscales concerning internal health issues (e.g., mood), while the external subscales loaded highest onto Factor 3. Miller and Thoresen (1999) capture this distinction by describing health as multidimensional (function, suffering, and inner peace). Thus, as in Factor 2, they distinguished the phenomenon of suffering from functioning.

Factor 2 incorporated only subscales from the Duke Health Profile. Among the eight subscales that loaded onto Factor 2, the highest loadings were from six mental health subscales: Anxiety-Depression (.865), General health (.847), Anxiety (.840), Depression (.800), Mental health (.793), and Self-esteem (.647). These subscales included definitions about symptoms of internal health (e.g. affect). The other two subscales on Factor 2 included Physical health and Social health from the Duke. Physical health cross-loaded higher onto Factor 3 with other definitions about external health. Social health loaded only onto Factor 2, but was defined with more internal language than usual social subscales (e.g. social self-esteem such as feeling comfortable around people and happy with family relationships).

The subscales from the Duke that did not load with the others were equally informative about the distinctive internal quality of Factor 2. For instance, the Pain, Perceived health, and Disability subscales of the Duke, that had definitions emphasizing external health, loaded only onto Factor 3. Further, the Physical health subscale that



loaded onto both Factor 2 and 3 was the highest loading on Factor 3 (.714 versus .431 on Factor 2). The General health subscale that loaded onto both Factors 2 and 3 was still consistent with the internal nature of Factor 2 and the external nature of Factor 3 because it included a combination of the physical, mental, and social subscales on the Duke Health Profile. This was in contrast to the General health subscale of the Rand that loaded only onto Factor 3 and emphasized rating of health without any inclusion of mental and social language. Thus, the definitions about physical function and ability were more consistent and strongly related to external definitions on Factor 3, while the internal health definitions loaded only onto Factor 2.

There are two characteristics of the Duke Health Profile that shape the definitions on Factor 2. First, all the mental health definitions refer to somatic symptoms of health (e.g., nervousness, fatigue, and sleep). The loading of the mental health subscales onto Factor 2 indicates an important distinction within mental health as represented by somatic symptoms versus mental health as represented solely by emotional language. For instance, Sense of Worth from the WEL loaded onto Factor 1 (Environmental Engagement) because its definition was about accepting self as unique and accepting one's mistakes. This definition was more similar to definitions about risk and engagement with the environment versus the symptoms of Factor 2 definitions. Also, Emotional Wellness from the PWS loaded onto both Factor 1 (Environmental Engagement) and Factor 5 (Meaning and Purpose), but not Factor 2. Emotional Wellness from the PWS was defined as secure self-identity and positive self-regard. It did not include health symptoms about sleeplessness or nervousness. Thus, Factor 2 represents a

construct of mental health that more specifically incorporates physical manifestations of mental health and illness.

The second characteristic of the Duke involves the temporal focus of many of the items on recent symptoms (e.g., in the past week). The failure of the Emotional Well-Being subscale from the Rand Health Survey to load with other mental health subscales from a health survey on Factor 2 highlights how both health symptoms and time are important features of Factor 2. Emotional Well-Being from the Rand loaded only onto Factor 5 (Meaning and Purpose). Emotional Well-being was defined as an absence of anxious and depressed feelings, or calm and happy feelings over the past 4 weeks. This definition about a more enduring emotional state was in contrast to the definitions about anxious and depressed feelings on the Duke subscales that only loaded onto Factor 2 (e.g., Anxiety-Depression, Anxiety, Depression, and Mental health). The subscales on Factor 2 incorporated items that emphasized symptoms over the past week. Therefore, Factor 2 represents a construct that could be described as more short-term in nature than other definitions of mental health.

The short-term nature of definitions on Factor 2 was further accentuated by the separate loadings of two physical subscales. While the Physical health subscale of the Duke loaded onto Factors 2 and 3, the Role-limitations due to Physical health subscale of the Rand loaded only onto Factor 3. The Physical health subscale of the Duke was defined as capacity in the last week for ambulation as well as symptoms of pain. In contrast, the Role-limitations-Physical subscale of the Rand was defined as the amount that physical health has interfered with daily activities in the past four weeks; therefore, it emphasized more enduring health symptoms. While both subscales were consistent with

the physical definitions on Factor 3, the shorter-term symptoms of the Duke's Physical health subscale were observed as more consistent with Factor 2.

Finally, Factor 2 (Psychosomatic Expression) was characterized by more negative emotional states than the affective-like definitions on other subscales. This is evident in the negative loadings of the subscales on Factor 2. In fact, the Duke Health Profile was designed specifically to address both positive and negative symptoms of health. On the other hand, subscales from wellness instruments are specifically designed to emphasize optimal, or high-level wellness across dimensions of the individual. For instance, Emotional Wellness of the Perceived Wellness Survey was defined with only positive language (e.g., secure self-identity and positive self-regard), and it loaded onto Factors 1 and 5, not 2. The Sense of Worth subscale from the WEL incorporated language that was similar to subscales on the Duke (e.g., self-esteem), yet Sense of Worth did not load onto Factor 2. Instead, it was also a wellness subscale and included more positive language: self-esteem and accepting one's imperfections.

Overall, Factor 2 is a construct of Psychosomatic Expression. The distinctive feature of Factor 2 is that it includes health symptoms of affect that are predominately short-term in nature and have a substantial emphasis on the negative side of affect (e.g., anxiety and depression). This Factor offers an important contribution to the efforts of primary care physicians. Current measures of health are increasingly multidimensional, assessing the physical, mental, and social dimensions of the individual. However, Factor 2 indicates that researchers cannot compare mental dimensions across surveys and assume they are measuring the same construct. Another implication of Factor 2 relates to the recent efforts to design surveys that tap not only illness, but also the full continuum of

health, including positive health. The loadings on Factors 2 and 3 illustrate health constructs that are distinct from wellness constructs. Thus, optimal health or wellness cannot be used interchangeably in the language as it has been in past studies (e.g., Buck, 1996). Finally, the distinction in health between short-term symptoms and long-term health is seen in Factor 2. This finding suggests that primary care physicians might consider whether they want to look assess short-term or long-term symptoms of their patients.

### **Factor 3: Physical Functioning**

The subscales that loaded onto Factor 3 indicated a construct that is characterized by physical functioning. Factor 3 included eleven subscales with definitions that emphasized physical health in some way. As discussed under Factor 2 (Psychosomatic Expression), Factor 3 also indicates an important distinction within the omnibus definition of health. All of the definitions on Factor 3 refer to external aspects of health in that they describe functioning ability in the outside world or perception about that ability. Just as Miller and Thoresen (1999) distinguished impairment, or functioning, from suffering, so too does Factor 3. Miller and Thoresen (1999) defined suffering as an internal interpretation of the external state. The distinction between Factors 2 and 3 could be viewed in a similar manner. While Factor 2 emphasized health symptoms related to internal, mental health, Factor 3 emphasizes health symptoms related to external, physical health.

Factor 3 included subscales from both health and wellness surveys; however, all of the subscales had definitions specific to physical functioning in the external world versus mental health or social health. For instance, Physical health from the Duke, Physical wellness from the PWS, and Role-limitations due to Physical reasons from the Rand all

loaded solely onto Factor 3. Pain subscales from both the Rand and the Duke loaded onto Factor 3, as did Energy from the Rand and Disability from the Duke. Two General health subscales loaded onto Factor 3, yet one of them (from the Duke) had a definition that included mental and social health with physical health, and it cross-loaded higher onto Factor 2. Instead of being a combination of subscales from various dimensions, General health from the Rand that loaded only onto Factor 3 was defined as a rating of one's own health as compared to other and expectation for health. Thus far, there is a clear theme of ability to function, and symptoms of pain on Factor 3. The one exception to this theme would seem to be the loading of Social Functioning from the Rand onto Factor 3. Yet, the definition associated with this label was primarily about how physical health or emotional problems interfered with the ability to participate in social activities. This is a more physical approach to defining social health than is made on instruments such as the PWS where Social Wellness is defined as perception of social support. Social Wellness from the PWS did not load with Social Functioning from the Rand onto Factor 3, thus, further reinforcing the observation of Factor 3 as a construct about external health, or physical functioning.

One unusual finding in Factor 3 was the failure of the Physical functioning subscale of the Rand to load with other physical definitions that did load on this, or any other Factor. Its strongest loading was .385, and that was on Factor 3, with the next strongest loading on any other Factor being .167. The Rand's physical functioning subscale was defined as the amount that health limits activities on a typical day. One reason for the failure of this subscale to load onto Factor 3 could be attributed to the high health of the college students in this study (e.g., the mean was 91.66 for Physical functioning).

Although Physical Functioning did not load onto Factor 3, a similar definition from the Rand did (e.g., Role-limitations attributed to physical problems). The Role-limitations Physical definition emphasized a time period of 4 weeks. Thus, in the same way that short-term symptoms seemed to characterize Factor 2, longer-term symptoms seemed more consistent with definitions on Factor 3. It is important to note though that the Duke's Pain subscale did load onto Factor 3 and was defined as hurting or aching in the past week. Perhaps the time factor of one day was perhaps extreme enough to be distinct from the other definitions.

Overall, Factor 3 represents the traditional, biomedical definition of health that refers to physical functioning. While this Factor seems the most consistent in the literature, some wellness definitions of the physical dimension have used exercise and nutrition as markers for physical well-being. As discussed in Factor 1 (Environmental Engagement), Exercise and Nutrition subscales from the WEL loaded only onto Factor 1. The separation from Factor 3 illustrates where definitions across disciplines are distinct. Holistic researchers might want to consider whether using a construct about lifestyle habits and engagement in the external world will better suit their research than a construct about physical functioning in the external world. Primary care physicians using comprehensive health assessments might want to understand that one instrument with a social dimension taps a distinct construct from another instrument that defines social health internally and mentally vs. externally and socially.

#### **Factor 4: Spiritual Connection**

The subscales that loaded onto Factor 4 indicated a construct that is characterized by definitions of spiritual connections with something beyond oneself. This was most apparent by the fact that all subscales on Factor 4 were spirituality subscales from

spirituality and wellness surveys. However, Factor 4 indicates an important distinction under the omnibus definition of spirituality. Just as wellness and health separated into internal and external definitions, external definitions of spirituality loaded onto Factor 4 while internal definitions of spirituality loaded onto Factor 5. Researchers such as Allport and Gorsuch (as in Gorsuch, 1994) have described a similar kind of distinction with external and internal religiousness. Further, researchers on spirituality have described models of that included anywhere from two dimensions (Ellison & Smith, 1991) to ten dimensions (Ingersoll, 1998). Thus, Factor 4 provides one way to sort out the significant indicators of spirituality.

The subscales that loaded significantly onto Factor 4 had definitions about some external belief or involvement with a higher power, and belief that spirituality is important to feeling fulfilled. For instance, the highest loadings on Factor 4 were Core Spirituality from the SIBS (.924; belief that spirituality is important to being fulfilled and relationship with a higher power), Cognitive Orientation from the ESI (.913; perception of spirituality as important to personal functioning), Religiousness from the ESI (.879; beliefs and attitudes, and religious practice), and Spirituality from the WEL (beliefs and behavior practiced, including prayer or meditation). In all of these definitions, there is language that refers to spirituality as important, as well as a relationship with a higher power. Even Personal Application/Humility from the SIBS had language about external applications of spirituality (e.g., helping others without expecting anything in return). None of the subscales that loaded onto Factor 4 cross-loaded onto another Factor indicating a consistency within these definitions and distinct from other definitions of spirituality. This can help researchers to sort out where the overlap in definitions exists.

Interestingly, spiritual subscales with definitions of meaning and purpose did not load onto Factor 4 at all. This finding reflects the original distinctions between religious and existential spirituality. However, various other definitions from wellness and health loaded with the existential definition of spirituality while only definitions from spirituality surveys loaded onto Factor 4. This is an important finding for researchers seeking to define the spiritual dimension of holistic health.

Two spirituality subscales loaded neither onto Factor 4 nor Factor 5 (Spiritual Perspective/Existential Spirituality and Acceptance/Insight from the SIBS). The Spiritual Perspective/Existential Spirituality subscale was defined as finding meaning in times of hardship, hope in times of despair, appreciating nature, and examining actions to see if they reflect one's values. This subscale loaded at .394 onto Factor 4 and .397 onto Factor 1. Although it was not significant in the 5-Factor solution, these loadings show a subtle distinction between Factors 1 and 4. Factor 4 included a very similar definition (e.g., Personal Application from the SIBS). However, the absence of Spiritual Perspective suggests that facing challenges and matching values with action might be more similar to Environmental Engagement. While the Personal Application subscale that did load onto Factor 4 involved helping without expectations. The similarity of this subscale with other definitions about a higher power and importance of spirituality is an important distinction for future research to explore.

Acceptance/Insight from the SIBS was defined as recognizing the futility of focusing on things that cannot be changed. This subscale had low loadings on all of the 5 Factors, with its highest loading on Factor 1 at .273. Hatch et al. 1998) noted similar



findings of this subscale as the weakest factor on the SIBS, and proposed the possibility for revision in future studies.

Two definitions were particularly close in language, yet separated across Factors 4 and 5 (e.g., Spirituality from the WEL that loaded onto Factor 4, and the Psychological Wellness from the PWS that loaded onto Factor 5). Both subscales were from wellness instruments and incorporated language about optimism. However, the Spirituality subscale of the WEL also emphasized beliefs and behavior, as well as prayer and meditation. The Psychological wellness subscale of the PWS did not include language other than optimism and expectation for positive outcomes. This subtle difference that separated the two subscales illustrates the complexity that has emerged in the language of definitions. The whole of a definition can make a distinction that is the difference between two constructs. In this case, the Spirituality subscale on Factor 4 included language about external relationships with a higher power versus the internal optimism of the Psychological subscale on Factor 5.

Overall, Factor 4 represents an external definition of spirituality that identifies a relationship with a higher power, or a connection with others. This Factor is valuable in light of a recent factor analytic study on 18 measures of spirituality that was conducted by MacDonald (1997). MacDonald (1997) identified five factors of spirituality: Cognitive Orientation toward spirituality, Experiential/Phenomenological, Existential, Paranormal, and Religion. MacDonald's study provided a way to organize and operationalize spiritual constructs. The findings in Factor 4 of the current dissertation illustrate how to understand these definitions in context with health and wellness definitions. Specifically, Factor 4 suggests that definitions about spiritual connections and

the value of those external connections create a distinct construct from both physical health and wellness. Amidst the many definitions of spirituality that have emerged, researchers need to understand the primary constructs in spirituality that are distinct from health and wellness. This will allow holistic researchers to use language that is consistent when identifying variables in their studies that combine health or wellness with spirituality.

### **Factor 5: Purpose and Resilience**

Factor 5 included perhaps the most varied set of subscales in the 5-Factor Solution. It was labeled Purpose and Resilience because of the number of definitions relating to the meaning and purpose one finds in the world, and the sense of security and resilience derived from that kind of purpose. Factor 5 provided a distinction within the omnibus definition of spirituality with its loadings of definitions that described, what we call here, internal spirituality. Definitions of meaning and purpose that loaded only onto Factor 5 were a striking contrast to the external relationship part of spirituality that characterized Factor 4. Yet, Factor 5 also was the counterpart to Factor 1 by incorporating the internal definitions of wellness (i.e. security) while Factor 1 was predominately external definitions of wellness (i.e., engagement). Overall, Factor 5 incorporated a blend of internal definitions that combined to create a construct of purpose and resilience.

Factor 5 included two definitions of spirituality that described meaning and purpose (Existential Well-Being from the ESI, .672; Spiritual Wellness from the PWS, .602). Existential Well-Being was the strongest loading on Factor 5, and although Spiritual Wellness cross-loaded onto Factor 1 (.455), its loading on Factor 5 was higher (.602). Neither of these spirituality subscales loaded with the external definitions of

spirituality on Factor 4. Thus, researchers can see a separation under the omnibus definition of spirituality between external and internal emphasis.

Factor 5 also reinforced the separation under the omnibus of wellness because it included almost all of the definitions from the PWS, but almost none from the other wellness survey in this study (the WEL). Specifically, Factor 5 included internal definitions of wellness (Psychological wellness, Emotional Wellness, and Social wellness from the PWS). All of these wellness subscales cross-loaded onto Factor 1, yet their higher loadings onto Factor 5 and internal language reinforce the emphasis of internal well-being on Factor 5. Another subscale of the PWS loaded onto Factor 5 (Intellectual Wellness), yet, it had a more external emphasis and cross-loaded higher onto Factor 1. The difference between the external and internal subscales of the PWS reinforced the internal nature of Factor 5. Adams et al. (1997) described the value of this separation when they designed their PWS to focus on perceptions versus behaviors.

Factor 5 contains definitions about meaning and purpose, as well as definitions about emotional well-being (e.g., Psychological wellness from the PWS, Emotional wellness from the PWS, and Emotional well-being from the Rand). The Emotional well-being subscale from the Rand is particularly interesting because it loaded separately from the other health definitions about mental health on Factor 2. The Emotional Well-Being subscale from the Rand was defined as absence of anxious and nervous feelings and presence of calm and peaceful feelings. Its difference from the Duke subscales that loaded on Factor 2 includes a longer duration of time reported (e.g., the Rand refers to the past 4 weeks, while the Duke refers to the past week). Further, the language of happiness and calmness that are a part of this definition seem to be more consistent with an

enduring well-being that comes with a sense of purpose as opposed to the current symptoms of affect described on Factor 2.

The definitions on Factor 5 that were slightly different from purpose or security were Social Wellness (PWS), Realistic Beliefs (WEL), and Intellectual Wellness (PWS). These three definitions contributed to a resilient theme; a word that was even included in the definition of the subscale that loaded strongest onto Factor 5 (Existential Well-Being from the ESI). In particular, Realistic Beliefs provided a way to understand differences across definitions labeled as self-esteem or self-worth. Realistic Beliefs (WEL) was defined as having realistic beliefs and accepting self as imperfect and unique. Another term used in the definition of Realistic Beliefs was self-acceptance. The unique aspect of the Realistic Beliefs subscale was that it did not load with the other WEL subscales onto Factor 1 (Environmental Engagement). Further, a similar definition was Sense of Worth from the WEL that was defined as self-esteem and accepting one's imperfections. Hattie et al. (in press) observed that these two subscales (Sense of Worth and Realistic Beliefs) loaded together on the same Factor called Coping Self. In this study, where subscales from fields other than wellness are used, these two subscales separated. Sense of Worth was observed as more similar to definitions of Environmental Engagement where one takes risk and has positive engagement with the environment. In contrast, this 5-Factor Solution showed that Realistic Beliefs was more consistent and similar to definitions on Factor 5 (Meaning and Purpose) about resilience derived from meaning. Another important clarification about Realistic Beliefs is its distinction from the affective definitions on Factor 2. Factor 2 included a Self-esteem subscale that was defined as liking oneself and not giving up easily. However, Self-esteem from the Duke on Factor 2

also included language about social self-esteem and getting along with others. Other subscales on Factor 2 had some overlap between subscales and included personal self-esteem in their definitions; yet, the definitions always had some other language about somatic symptoms of negative mental health. In contrast, Realistic Beliefs did not include language about depression, anxiety, or health symptoms such as fatigue. Further, Realistic Beliefs was designed as a subscale to capture cognitive components of coping by Hattie et al. (in press). Thus, the resilience and coping theme of Factor 5 is a distinguishing feature of the construct labeled Purpose and Resilience.

Another subscale on Factor 5 that helps us understand its uniqueness is Social Wellness (PWS). Social Wellness was defined as perception of social support and of being a valued support provider and cross-loaded onto Factor 1 (.439 on Factor 1 versus .502 on Factor 5). The higher loading on Factor 5 indicates that this particular definition has some overlap with Environmental Engagement on Factor 1, but is more similar to definitions about meaning and coping in Factor 5. The perception of being a valued support provider distinguishes this definition from two similar subscales of the WEL that loaded onto Factor 1 (e.g., Friendship and Love). Hattie et al. (in press) combined Friendship and Love (WEL) into one factor that was called the Social Self. The definition of Friendship includes language about a connection with others that can lead to empathy, cooperation, and altruism. The definition of Love included language about receiving and expressing affection. Thus, when examined with definitions from other fields (e.g. health and spirituality), there is a greater similarity between the external, or active language in Friendship and Love that distinguishes these social definitions from the more internal definition of perception of support in the Social Wellness subscale (PWS). Further, a

Social health subscale from the Duke loaded only onto Factor 2 (Affect) and not with this Social wellness subscale on Factor 5. The Social health definition on Factor 2 emphasized participation in social activities, as well as comfort around people and not being easy to get along with. The distinction between the definitions on Factor 2 and Factor 5 is that Factor 2 emphasizes more short-term affect and interaction, while the Social Wellness definition on Factor 5 is not time-limited and describes feeling like a valued provider of support. The emphasis on a valued role in the Social Wellness (PWS) is consistent with the more enduring nature of purpose in one's life on Factor 5.

Finally, Intellectual Wellness loaded onto Factor 5 and was consistent with both purpose and resilience. Intellectual Wellness on the WEL was actually a subscale called Intellectual stimulation, Problem Solving, and creativity. It was defined as intellectual stimulation and balance of brain function that is logical and involves a sense of awe and wonder. Hattie et al. (in press) explained that examples of this subscale would be seeking others views, learning new things, being a good problem-solver, and finding creative solutions. This definition would characterize a person who had a sense of meaning and purpose. It would also describe a person who is resilient. Thus, Intellectual Stimulation from the WEL reinforces the combination of these two parts to Factor 5: meaning and resiliency. Intellectual Stimulation did cross-load higher onto Factor 1, and was consistent with the Environmental Engagement on that Factor. Yet, the loading of this wellness subscale onto Factor 5 with definitions of existential spirituality presents a distinct construct to consider in holistic health (resiliency).

Overall, Factor 5 makes a valuable contribution to the holistic literature. By combining definitions from all fields (health, wellness, and spirituality), Factor 5

introduces a new construct to previous understandings of holistic health. That is, Factor 5 is a construct of purpose that can be seen in the context of resiliency. Factor 5 suggests that purpose and resiliency combine to not only create one construct, but this construct is distinct from external definitions of wellness, and external definitions of spirituality.

### **Summary**

Three conclusions can be drawn from this 5-Factor Solution. First, it suggests that the original model (e.g., mind, body, spirit) of holistic health is incomplete in representing whole health. The 5-Factor Solution identified three constructs that could be said to parallel the mind, body, and spirit model (e.g., Psychosomatic Expression, Physical Functioning, and Spiritual Connection) However, two other factors emerged as significantly distinct constructs: Environmental Engagement, and Purpose and Resiliency. These two constructs add to our understanding of holistic health by including definitions about risk that individuals take to become involved with their environment (e.g., Environmental Engagement, Factor 1), as well as the Resiliency that comes when individuals have purpose in their lives (e.g., Purpose and Resiliency, Factor 5). The additional constructs are consistent with the emphasis in all of science toward systems and holism.

The second conclusion that can be drawn from the 5-Factor Solution is that there are fine distinctions among definitions of holistic health that can prevent communication across disciplinary lines. The loadings of subscales with similar labels (e.g., emotional, social, or spiritual) onto separate Factors indicated that subtle differences could be significant enough to represent distinct constructs.

Finally, the third conclusion that can be drawn from the 5-Factor Solution is that there is an important distinction between the internal and external qualities in definitions

of holistic health. Definitions of wellness were divided across Factor 1 (Environmental Engagement - external) and Factor 5 (Purpose and Resiliency - internal). Definitions of health were divided across Factor 2 (Psychosomatic Expression - internal) and Factor 3 (Physical Functioning - external). Definitions of spirituality were divided across Factor 4 (Spiritual Connection- external) and Factor 5 (Purpose and Resiliency- internal). The division between internal and external definitions is fairly new to the literature. Adams et al. (1997) described the importance of distinguishing internal perceptions of wellness vs. external indicators. Even the spiritual literature has emphasized that internal beliefs might not reflect external behaviors of spirituality. However, this 5-Factor Solution provides a way to sort out the distinctions across disciplines. These three conclusions provide an impetus for identifying a lexicon of holistic health that crosses disciplinary lines.

### **Limitations and Recommendations for Future Research**

This study was limited by the set of instruments chosen for the factor analysis. The two instruments selected from each field (health, wellness, and spirituality) represented only a sample of the definitions available in that field. It is possible that the use of other instruments would result in a different set of factors than this 5-Factor Solution. Each field (health, spirituality, and wellness) is continually evolving and developing measures that capture more holistic definitions within that field. Thus, future studies might be able to use measures that introduce new definitions and result in a different factor structure. For instance, the Fetzer Institute (1999) in conjunction with the National Institute on Aging found 12 areas of spirituality with connections to health outcomes. In 1999, the Fetzer Institute released a report providing valid items for assessing each factor of spirituality (the Multidimensional Measurement of Religiousness/Spirituality for Use in Health Research). Since this report has emerged



after the development of both spiritual instruments used in this study, it could lend itself to future research that continues to clarify the evolving confluence of health, wellness, and spirituality.

Another limitation of this study was the sample of participants in this study. This sample included primarily undergraduate college students of traditional age (e.g., 18-22 years old). The 18 to 22 year old population in college is facing unique developmental tasks relating to health, wellness, and spirituality. The 5-Factor Solution might be different with other age groups. For instance, how a group of elderly individuals respond to health symptoms and spirituality might illustrate different loadings of definitions.

Overall, the 5-Factor Solution provides a contribution to a continuing conversation about holistic health. As noted by Randall (1996), managed care is expected to shift the focus of healthcare to continuity of care and providers across disciplines will need to function interdependently. Thus, studies such as the current one will be needed to continue to explicate the lexicon for holistic health.

## APPENDIX A LABELS AND DEFINITIONS

### Health Labels and Definitions

**Short Form 36** (Ware & Sherbourne, 1992) – 8 scales measuring 3 aspects of health (Garratt, Ruta, Abdalla, Buckingham, & Russell, 1993; RAND, 1992):

- I. Functional status
  - (a) Physical functioning – Amount that health limits activities on a typical day (e.g., climbing stairs, walking, or bathing).
  - (b) Social functioning – Amount that physical or emotional problems interfered with normal social activities with family, friends, or neighbors during past 4 weeks.
  - (c) Role limitations attributed to physical problems – Amount that physical health has interfered with daily activities (e.g. work) in past 4 weeks.
  - (d) Role limitations attributed to emotional problems – Amount that depressed or anxious feelings interfered with work or regular activities in past 4 weeks.
- II. Well-being
  - (a) Mental health/Emotional Well-being – absence of anxious or depressed feelings, or calm and happy feelings over last 4 weeks.
  - (b) Energy and fatigue – Feelings of pep and energy, or tiredness in last 4 weeks.
  - (c) Pain – how much bodily pain during past 4 weeks.
- III. Overall evaluation of health
  - (a) General health perception – Personal rating of one's own health in relation to others.

### **DUKE Health Profile** – Parkerson, 1999

- 1) Physical Health – physical capacity for ambulation (e.g., walking and running) and physical symptoms (e.g., sleeping, fatigue, and pain).
- 2) Mental Health – psychological symptoms (e.g., depressed feelings, nervousness), cognition (concentrating), and personal self-esteem (like who I am, give up too easily).
- 3) Social Health – participation in social activities (e.g., friends, relatives, a group), and social self-esteem (not easy to get along with, comfortable around people, happy with family relationships).
- 4) General Health – average of overall physical, mental, and social health scales.
- 5) Perceived Health – self-assessment about being a basically healthy person.
- 6) Self-Esteem – personal self-esteem (e.g., like who I am, give up too easily) and social self-esteem (e.g., not easy to get along with, comfortable around people, happy with family relationships).

- 7) Anxiety – social self-esteem (e.g., not easy to get along with, comfortable around people, happy with family relationships), nervousness, and somatic symptoms (e.g., sleeping, fatigue).
- 8) Depression – personal self-esteem (e.g., like who I am, give up too easily), depressed feelings, and somatic symptoms (e.g., sleeping, fatigue).
- 9) Anxiety-Depression – combined items from anxiety and depression plus cognition (concentrating).
- 10) Pain – hurting or aching of body.
- 11) Disability – confinement to home because of injury or health problem during preceding week.

**Mental, Physical, Spiritual Well-Being Scale (MPS)** – (Vella-Brodrick & Allen, 1995)

- 1) Mental – desire to increase knowledge, develop appreciation of aesthetics, and to use rational or cognitive processes.
- 2) Physical – efficient functioning of physical components; amount of aches and pains.
- 3) Spiritual – religious and existential dimensions; including: ethics, self-actualization, self-worth, life purpose, and peace with self.

**Neuman's Systems Model of Health** – (Neuman, 1995 as operationalized by Buck, 1996)

- 1) Physiological dimension – bodily structure and function
- 2) Psychological well-being – mental processes and perception; overall cognitive and affective functioning. Parallels both mental and emotional health. Includes anxiety, cognitive stress, personality hardness.
- 3) Developmental – life development across the lifespan; differentiation; psychosocial maturity.
- 4) Sociocultural dimension – relations with social and cultural functions, including adaptability and cohesion of family life.
- 5) Spiritual dimension – central or core part of individual that can bring about change on all other dimensions.

### **Wellness Labels and Definitions**

**Lifestyle Assessment Questionnaire (LAQ)** – (National Wellness Institute, 1983)

- 1) Physical – exercise and nutrition, self-care, vehicle safety, and drug usage.
- 2) Social – relationships with others in family and community.
- 3) Emotional Management – emotional awareness, acceptance, and emotional management.
- 4) Intellectual Wellness – creative, stimulating, mental activities.
- 5) Occupational Wellness – work that is satisfying.
- 6) Spiritual Wellness – seeking meaning and purpose; deep appreciation for life.

**The Perceived Wellness Survey (PWS)** (Adams, Bezner, & Steinhardt, 1997) –

- 1) Physical – positive perception and expectation of physical health (e.g., expect to always be physically healthy).
- 2) Spiritual – positive perception of meaning and purpose in life (e.g., believe there is real purpose for my life).

- 3) Psychological – perception and expectation for positive outcomes in life; optimism.
- 4) Social – perception of available support and of being a valued support provider.
- 5) Emotional – secure self-identity and positive self-regard (e.g., feel confident about abilities).
- 6) Intellectual – perception of being internally energized by optimal intellectually stimulating activity (e.g., in past, I have found intellectual challenges vital to my well-being).

#### **Health-Promoting Lifestyle Profile II (HPLP II) – (Walker, 2002)**

- 1) Spiritual Growth – the development of inner resources through transcending, connecting, and developing. Transcending refers to balance within, inner peace, creating one's potential. Connecting refers to harmony and connection with universe. Developing refers to searching for meaning and purpose, and working toward goals in life.
- 2) Health Responsibility – sense of accountability for one's own well-being; including educating self about health.
- 3) Physical Activity – regular participation in light, moderate, and/or vigorous activity.
- 4) Nutrition – knowledgeable selection and consumption of foods essential for sustenance, health, and well-being.
- 5) Interpersonal Relations – utilizing communication (verbal and nonverbal) to achieve a sense of intimacy within meaningful, rather than casual, relationships with others.
- 6) Stress Management – identification and mobilization of psychological and physical resources to control or reduce tension.

#### **Wellness Evaluation of Lifestyle -J (WEL-J) (Hattie, Myers, & Sweeney, in press)**

- 1) Existential Self – distinguishing individuals as intrinsically unique; their essence.
  - a. Spirituality – awareness of being that transcends material aspects of life and give sense of wholeness or connectedness with universe. Includes: hope, optimism, purpose in life, transcendence.
  - b. Self-care – preventative habits and remedial care that extend longevity and quality of life, including not smoking, no excess alcohol, no illegal drugs, wear seat-belts, regular health check-ups, avoid harmful substances. Taking responsibility for one's own high level wellness.
  - c. Gender identity – satisfaction and confidence in one's gender identity.
  - d. Cultural Identity or Identification – racial identity and acceptance of and pride in benefits of one's culture.
- 2) Social Self – how we connect with others
  - a. Friendship - social relationships that involve a connection with others, but do not have marital, sexual, or familial commitment (e.g., friends to depend upon, give emotional support). Can lead to empathy, cooperation, and altruism.
  - b. Love – healthy love relationships, including trust, receiving and expressing affection, nonpossessive caring, enduring relationships, satisfaction with closeness and touch.
- 3) Interactive Self – the way we positively interpret our world; coping skills for daily living.

- a. Intellectual Stimulation/Problem-Solving/Creativity – intellectual stimulation and balance of brain functioning that is logical and involves sense of awe and wonder (e.g., seek others views, learn new things, good problem solver, find creative solutions).
  - b. Sense of Control – perception of whether they have an impact on what happens to them or a lack of control (achieve goals set, solve own problems, plan ahead, take charge and manage).
  - c. Emotional Awareness/Responsiveness – positive management of emotions (e.g., ability to experience and express feelings: aware of how I feel, range of emotions, feeling spontaneous).
  - d. Sense of Humor – cognitive and emotional aspects of humor; recognition, appreciation, and creation of humor (e.g., humor in serious tasks, humor for perspective).
  - e. Work – work satisfaction (e.g., challenge, financial reward, coworker relations and working conditions).
- 4) Physical Self
- a. Exercise – regular physical activity. Including weight in acceptable range, stretching, if enjoy regular exercise, and if think important to be fit.
  - b. Nutrition – eating and drinking habits (e.g., balanced diet, variety of foods, satisfied with diet).
- 5) Intra-active Self – our manner of coping; responding to circumstances in a manner that promotes healthy functioning; Self-Direction.
- a. Leisure – play (e.g., physical, social, intellectual, volunteer, and creative pursuits such as making time for leisure, able to stand still, manage stress).
  - b. Stress Management – ability to identify stressors and use stress reduction strategies (e.g., stress, thoughts, ability to relax, coping with life).
  - c. Sense of Worth - Self-concept, self-esteem, and self-worth (accept self and imperfections, worthwhile person, unique person).
  - d. Realistic Beliefs – realistic beliefs and ability of people to accept themselves as imperfect (e.g., seldom jump to conclusions, need not be liked by all, like despite goals unmet, usually get what I want, not responsible for others).

### **Spirituality Labels and Definitions**

**Spiritual Assessment Scale (SAS)** – (Howden, 1992 as in MacDonald et al., 1995)

- 1) Unifying Interconnectedness – feeling of relatedness or attachment to others; harmony with the universe.
- 2) Purpose and Meaning in Life – search for events or relationships that provide a sense of worth; hope.
- 3) Innerness or Inner Resources – striving for wholeness, identity, and sense of empowerment, strength in crisis, calmness in uncertainty, at peace with self.
- 4) Transcendence – ability to go beyond the usual experience; the capacity to achieve wellness.

**Spiritual Orientation Inventory (SOI)** (Elkins, Hedstrom, Hughes, Leaf, & Saunders, 1988)

- 1) Transcendent Dimension – belief in a transcendent dimension whether religious or psychological; belief that there is something more than what we see to life; peak experiences.
- 2) Meaning and purpose in life – one has known the quest for meaning and emerged with a sense of purpose.
- 3) Mission in life – sense of vocation and responsibility to life; sense that one has a destiny to fulfill.
- 4) Sacredness of Life – experience of awe and wonder and sacredness even outside of religious settings; no dichotomy between sacred and secular; belief that there is sacred in the ordinary.
- 5) Material Values – appreciation of material goods without seeking ultimate satisfaction from them or using them to replace spiritual needs; believe that true satisfaction is in the spiritual.
- 6) Altruism – touched by the suffering of others; committed to social justice; love for humanity and commitment to taking action.
- 7) Idealism – committed to improving the world; able to see and love the potential in all aspects of life.
- 8) Awareness of the Tragic – awareness of human pain and death that gives depth and valuing of life.
- 9) Fruits of Spirituality – spirituality has a discernible effect on one's relationship to self, others, nature, and the ultimate.

**Psychomatrix Spirituality Inventory (PSI) – (Wolman, 1997)**

- 1) Awareness of transcendent source – awareness of a transcendent energy source.
- 2) Spiritual activities or practices – including meditation.
- 3) Use of healing practices – including using foods to calm self.
- 4) Experience of physical and emotional trauma
- 5) Body Awareness – feel connected to own body.
- 6) Religious History – parents spoke about God when growing up.
- 7) Current Religious Practices – attend religious services.

**Spiritual Involvement and Beliefs Scale – Revised (SIBS-R)** (Hatch, 2000)

- 1.) Core Spirituality – connection, meaning, faith, involvement and experiences (e.g., time for meditation or self-reflection, find meaning in times of hardship, relationship with someone for spiritual guidance, belief that prayers can change what happens, relationship with power greater than self, spiritual experience that changed life, joy because of spirituality, relationship with higher power helps love others more completely, grateful in difficult times)
- 2.) Spiritual Perspective/Existential spirituality – meaning in times of hardship, hope in times of despair, appreciate nature, grateful, examine actions to see if reflect values.
- 3.) Personal Application/Humility – help others without expecting something in return, focus on what needs to be changed in self rather than what needs to be changed in others.

- 4.) Acceptance/Insight – recognizing the futility of focusing on things that cannot be changed (e.g., find serenity by accepting things as they are).

**Delphi of Spirituality** – (Ingersoll, 1998, pp. 160-161)

- 1) Knowledge-learning – interest in increasing self-knowledge and knowledge of other aspects of life; perceives life as interesting.
- 2) Connectedness – with others, divine, environment, ecological awareness, community.
- 3) Conception of the absolute or divine – theistic; image and experience of divinity.
- 4) Meaning – perception that life is worth living; at peace with question of meaning.
- 5) Forgiveness – attitudes towards giving and receiving forgiveness.
- 6) Hope – belief that suffering is not in vain and won't last forever; feeling that one is safe; faith that allows one to endure.
- 7) Experience-ritual – rituals and practices that are a healthy part of life; practices that are proactive, not passive in nature.
- 8) Present-centeredness – Awareness of present; harmony with the truth.
- 9) Sense of freedom – capacity for play, including play that is meaningful but not purposeful; experience world as safe; free from coercion; willingness to commit.
- 10) Mystery – how deal with ambiguity and the unexplained; capacity for awe and wonder and comfort with these concepts.

**Expressions of Spirituality Inventory-Revised (ESI)** (MacDonald, 1997)

- 1.) Experiential/Phenomenological Dimension – experiential expressions and experiences of spirituality.
- 2.) Cognitive Orientation Towards Spirituality Dimension – cognitive-perceptual aspect of spirituality, or perception of spirituality as significant to personal functioning.
- 3.) Existential Well-Being Dimension – meaning and purpose, and perception of self as able to cope with difficulties in life
- 4.) Paranormal Beliefs Dimension – beliefs of a psychological nature (e.g., ESP, precognition and also witchcraft and ghosts)
- 5.) Religiousness Dimension – behavior and practices and beliefs and attitudes. Measures Judeo-Christian religious orientation best, but also intrinsic religiousness.

**Multidimensional Measurement of Religiousness/Spirituality** (Fetzer Institute, 1999)

- 1) Daily spiritual experiences – individual's perception of the transcendent in daily life and perception of interaction or involvement with the transcendent.
- 2) Meaning – process or search for meaning and success or failure of that search.
- 3) Values – different from religion that is under 'Commitment'. Not the presence or absence of values, but goals; what people use to select and justify their actions. Extent to which behavior reflects faith as the ultimate value.
- 4) Beliefs – Cognitive dimension of religion/spirituality. Promote expectations of positive outcomes and give a framework for the interpretation of human suffering.
- 5) Forgiveness – Overcome negative affect and judgment with compassion, benevolence and love. Includes confession, feeling forgiven by God and others, and forgiving others and oneself.
- 6) Private Religious Practices – Nonorganizational religious and spiritual practices.

- 7) Religious/Spiritual Coping – position that reflects benevolent methods of dealing with stressful events; coping abilities during struggle.
- 8) Religious Support – Aspects of social relationships between the participant and others in places of worship.
- 9) Religious/Spiritual History – religious/spiritual participation over the life-course; including life changing experience.
- 10) Commitment – importance of commitment to one's spiritual/religious beliefs
- 11) Organizational Religiousness – Involvement with formal religious institutions. Behavioral and attitudinal dimension.
- 12) Religious Preference – Religious tradition or denomination that one identifies with.



## APPENDIX B INFORMED CONSENT

Dear Student:

I am a doctoral student in counselor education at the University of Florida. My supervisor of this research project is Harry Daniels, Ph.D., Chair of the counselor education department. I am conducting a research study to examine student attitudes toward counseling.

Participation in this research project involves the completion of six questionnaires. You do not have to answer any question you do not wish to answer. Your total participation should last about one hour. Any inquiries regarding this study should be directed to the phone number and address of the principal investigator below, the research supervisor or the UFIRB, University of Florida, Institutional Review Board.

As part of this study you will be asked to complete two health surveys, two wellness surveys, and two surveys of spirituality.

To protect your confidentiality, a code number will be used to identify participants. The names of participants will not be used in any fashion. There will be no monetary compensation for participation in this study. There are no physical risks involved in this research. Benefits may include extra credit at no more than 2% of your total grade, to be offered at the discretion of your instructor.

Student counseling services can be provided by contacting the University Counseling Center at 392-1575. If you have any questions about this research, please contact me at 392-0731; the address for both the principal investigator and the research supervisor is 1215 Norman Hall, P.O. Box 117046, University of Florida, Gainesville, Florida, 32611. Questions or concerns about your rights pertaining to this study should be directed to the UFIRB office, University of Florida, Box 112250, Gainesville, Florida, 32611, (352) 392-0433.

My signature below indicates that:

1. The nature and purpose of this research has been explained and that I have been given the opportunity to ask any questions regarding my participation.
2. I understand that this investigation is used for educational purposes, which may include publication; your identity will be kept confidential to the extent provided by law.

3. I understand that participation in this research study is voluntary and that I may withdraw my consent at any time or discontinue participation in this study without consequence.
4. I understand that I will receive a copy of this informed consent form.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

APPENDIX C  
IRB FORM

1. TITLE OF PROTOCOL: Towards a Lexicon of Holistic Health
2. PRINCIPAL INVESTIGATOR:  
Stephanie M. Webster, Ph.D. candidate, Gainesville, Florida.
3. SUPERVISOR: (If PI is a student)  
Harry Daniels, Ph.D.; Chair, Department of Counselor Education, College of Education, 1215 Norman Hall, P.O. Box 117046, Gainesville, Florida; (352) 392-0731; harryd@edu15.coe.ufl.edu
4. DATES OF PROPOSED PROTOCOL: January 2, 2003 to April 30, 2003.
5. SOURCES OF FUNDING FOR THE PROTOCOL: No external funding.
6. SCIENTIFIC PURPOSE OF THE INVESTIGATION:

The purpose of the study is to identify the factors relevant to holistic health, and to examine the overlap and boundaries of each factor in an effort to establish a common language.

7. DESCRIBE THE RESEARCH METHODOLOGY IN NON-TECHNICAL LANGUAGE

Participants will be asked to complete a research packet consisting of a demographic questionnaire and six surveys (2 health, 2 wellness, and 2 spirituality). The six measures are: the RAND 36-item Health Survey, the DUKE Health Profile, the Wellness Evaluation of Lifestyle, the Perceived Wellness Survey, the Spiritual Inventory and Beliefs Scale, and the Expressions of Spirituality Inventory. The entire research packet should take approximately one hour to complete.

Participants will be asked to fill out an informed consent form. Each participant may receive extra credit compensation for no more than 2% of the total grade, but the offering of extra credit is at discretion of each individual instructor.

The names of the participants will be kept confidential; participants will be given a code number to protect individual anonymity; that number will be on the upper right hand corner of each research packet.

8. POTENTIAL BENEFITS AND ANTICIPATED RISK: (If risk of physical, psychological, or economic harm may be involved, describe the steps taken to protect the participant.)

The protocol involves no more than a minimal risk to the participant. Specifically, the risks involved in this study are no greater than those ordinarily encountered in daily life or during the routine performance of physical or psychological examinations or tests.

9. DESCRIBE HOW PARTICIPANT(S) WILL BE RECRUITED, THE NUMBER AND AGE OF THE PARTICIPANTS, AND PROPOSED COMPENSATION (if any):

Students will be volunteers from four undergraduate classes in the College of Education: stress management, interpersonal communication skills, career development, or drug and alcohol awareness, or from a pool of undergraduate research volunteers in the Department of Psychology. Volunteers will be asked to complete the research packet during one of a number of administration times outside of class. The administration will be supervised by the principal investigator in this study. The approximate age of participants will range from 18-22 years of age. Proposed compensation may include extra credit for each participant; however, this is up to the discretion of each individual course instructor.

10. DESCRIBE THE INFORMED CONSENT PROCESS. INCLUDE A COPY OF THE INFORMED CONSENT DOCUMENT.

Informed consent allows for research participants to freely and consciously choose to participate in a research study while fully satisfied that there is minimal risk to the research protocol and knowing that the confidentiality of each participant is guaranteed.

Principal Investigator: Stephanie M. Webster  
Principal Investigator's signature and date:

Research Supervisor/Committee Chairperson: Dr. Harry Daniels, Ph.D., Chair  
Research Supervisor/Committee Chairperson's signature and date:

I approved this protocol for submission to the UFIRB:

Department Chair: Dr. Harry Daniels, Ph.D., Professor

Department Chair signature and date:

APPENDIX D  
METAANALYTIC STUDIES OF HOLISTIC HEALTH

Table D-1. Meta-analytic Studies of Holistic Health

Metaanalytic Studies Author and Date	Purpose	Variables of Interest	Sample Used	Statistical Procedure	Findings
Dreifuss, A. (1990)	Phenomenological inquiry of 6 psycho-therapists who practice Buddhist Meditation	Spiritual themes in psycho-therapy	6 psycho-therapists who practice Buddhist Meditation	Qualitative analysis of themes from interviews	5 themes emerged: Conviction/grounding, Mindfulness, Impermanence, Suffering, Skepticism of Melodramas
Ellison & Smith (1991)	Spiritual Well-being Scale with 2 subscales: Religious Well-Being and Existential Well-Being	Report research using the SWBS between 1982 and 1990	Spirituality and health	Studies Summary and critical analysis	SWB positively correlated with self-ratings of health, and perceived health, negatively with blood pressure.
Fetzer (1999)	To identify the domains of religiousness/spirituality with theoretical or empirical connections to health outcomes	Empirical studies that in some way connected religiousness/spirituality to some measure of health as an outcome	Spirituality and health	Metaanalytical study of research studies	Findings identified 12 domains: Daily Spiritual Experiences, Meaning, Values, Beliefs, Forgiveness, Private religious practices, Spiritual coping, Religious support, Spiritual history, Commitment, Organizational religiousness.
Mueller, P. S., Plevak, D. J., Rummans, T. A. (2001)	Reviewed published studies and subject reviews that examined relationship between religious involvement and spirituality with physical health, mental health, and health-related quality of life.	Religious involvement spirituality, physical health, mental health, and health-related quality of life.	Research studies.	Meta-analysis of 350 studies of physical health and 850 studies of mental health that used religious and spiritual variables. Most research used measures of religious involvement.	Religious preference Both spirituality and religion were associated with decreased mortality, cardiovascular disease, hypertension, anxiety, depression; increased participation in health promoting behaviors.

APPENDIX E  
MULTIDISCIPLINARY STUDIES OF HOLISTIC HEALTH

Table E-1. Multidisciplinary studies of Holistic health

Author and Date	Purpose	Variables of Interest	Sample Used	Statistical Procedure	Findings
Deay, F.D. (1995)	Investigate the relationship between age, spiritual well-being measures, Type A and Type C Personality traits, and Cancer and coronary heart disease (CHD) risk factors	Age, Spiritual Well-being measures (Spiritual Well-Being Scale), Personality traits (Rationality/anti-emotionality rating scale), Cancer Risk Factor Rating Scale, Coronary Heart Disease Risk Factor Score Sheets	Employees (n=72) of MidWest Energy Corporation	1) Pearson product-moment correlation analyses 2) Regression analysis	1) Moderate negative association between subjective well-being and cancer risk factor. Moderate positive association between age and coronary heart disease risk factor. 2) Spiritual well-being and age were significant predictors of cancer and CHD risks. Type A and C were not predictors of cancer or CHD. Higher SWB could be predicted to lower cancer risk. *Concluded that SWB is a valid assessment in wellness programs.
Parkerson, GR Jr., Broadhead, WE, & Tse C-KJ (1995)	Examine predictive effects of baseline DUKE scores for health outcomes (follow-up visits, illness at follow-up, and hospitalization)	DUKE subscales: Physical health, Mental health, Social health, Perceived health, Disability	307 Ambulatory Primary Care Adult Patients over 18-month follow-up.	Longitudinal study on predictive effects of baseline DUKE scores	Physical health and perceived health predicted all outcomes concerning follow-up visits, illness at follow-up, and hospitalization.
Hermon & Hazler (1999)	Investigate nature and strength of relationships between college students' adherence to holistic wellness model and their self-reported levels of psychological well-being.	5 variables of Original Wellness Evaluation of Lifestyle (WEL) as predictor variables, and Psychological well-being (state and trait) - Memorial University of Newfoundland Scale of Happiness (MUNSH) as dependent variable.	Undergraduate students (n=155) at midwestern university enrolled in communication and organizational behavior courses. Voluntary participation.	1) Multivariate regression analysis with simultaneous entry. 2) Univariate Analyses on dependent variables.	1) There was a significant relationship between wellness and psychological well-being when the five wellness variables were used in combination. 2) Self-regulation, Work, Recreation, and Leisure were the best predictors of college students' psychological well-being. Strong relationship between Self-Regulation and Psychological Well-being. Friendship reached statistical significance in univariate analysis with the trait dimension of psychological well-being, but not the state.



Table E-1. Continued

Author and Date	Purpose	Variables of Interest	Sample Used	Statistical Procedure	Findings
Waite, Hawks, & Gast (1999)	Evaluate the strength of the relationship between spiritual health and health-promoting behaviors	Spiritual health (as measured by the spiritual growth subscale of the Health-promoting Lifestyle Profile II), and Health-promoting behaviors (Health-promoting life-style profile II with subscales: health responsibility, physical activity, nutrition, interpersonal relations, and stress management)	Convenience sample of volunteers at a workforce population in Utah (n=200). 64% of sample was 25 years or younger; 79% Latter-day Saints	1) Product-moment correlation used to evaluate relationships between subscale and composite measures of spiritual health and health-promoting behaviors. 2) ANOVA to determine if scores on composite measures of spiritual health and health-promoting behaviors differed by demographic variables.	1) Three of the subscales of the Health-promoting Lifestyle Profile II reflected the multidimensional definition of health for spiritual health by including locus of control, sense of coherence, self-esteem, and connectedness. Strongest correlation was found when a composite measure of spiritual health used rather than isolated psychosocial variables. 2) Gender and employment status made statistically significant effect on spiritual health scores, with women higher than men, and white collar workers higher than blue collar.
Adams, T.B., Bezner, P.T., Drabbs, M.E., Zambarano, R.J., & Steinhart, M.A. (2000)	Evaluate the relationship of spiritual and psychological dimensions to each other and a proposed model of perceived wellness (where effect of spiritual wellness on perceived wellness in college students would be mediated by psychological wellness).	Dependent variable: perceived wellness (Perceived wellness survey); Determinants of: 1) Life purpose (Life purpose subscale from the Life Attitude Profile). 2) Optimism (Life Orientation Test) 3) Sense of Coherence (Sense of Coherence scale - short version)	Convenience sample of undergraduate students enrolled in a health education class (n=112).	1) Pearson product-moment correlation between perceived wellness and life purpose, optimism, and sense of coherence. 2) Path analysis to examine proposed model and alternative model (the effect of psychological wellness on perceived wellness would be mediated by spiritual wellness). 3) Examines goodness of fit of two models.	1) Higher scores on perceived wellness were significantly related to higher scores on life purpose, optimism, and sense of coherence. 2) Supported the proposed model and not the alternative model. Optimism and Sense of Coherence had an independent effect on perceived wellness and mediated the impact of Life Purpose on overall perceived wellness. 3) Goodness of fit between model and data supported.

Table E-1. Continued

Author and Date	Purpose	Variables of Interest	Sample Used	Statistical Procedure	Findings
Pullen, C., Walker, S.N., & Fiandt, K. (2001)	Examine the determinants of health-promoting lifestyle behaviors in rural, older women.	Health promoting behaviors - Health Promotion Lifestyle Profile II. Perceived health status- MOS SF General Health Survey. Definition of health- Laffrey Health Conception Scale.	Convenience sample (n=102) of rural women, 65+ years old; Mean age of 74.2.	Multiple regression analyses.	Health-promoting lifestyle behaviors were associated with younger age, living with others, defining health as wellness, better perceived mental health, and more sources of health information and provider counseling. Defining health as wellness, physical activity, nutrition and stress management determined overall health-promoting lifestyle.

APPENDIX F  
FACTOR ANALYSES RELATING TO HOLISTIC HEALTH

Table F-1. Factor Analyses relating to Holistic Health

Author and Date	Purpose	Variables of Interest	Sample Used	Statistical Procedure	Findings
Ellison (1983)	Examine the fit of the 2 factor model	Religious Well-Being subscale (RWB) and Existential Well-Being subscale (EWB) of the Spiritual Well-Being Scale	206 students at three religiously-oriented colleges	Factor analysis using varimax-rotation	All of the religious items loaded onto the RWB factor, but the existential items loaded onto two subfactors: life direction and life satisfaction.
Kass, J.D., Friedman, R., Leserman, J., Caudill, M., Zuttermeister, P.C., Benson, H. (1991)	Validation and preliminary testing of the Inventory of Positive Psychological Attitudes (IPPA)	The IPPA (n=30) and its two domains: Life Purpose and satisfaction, and Self-confidence during potentially stressful situations	1) 2 groups (n=66; n=134) of adult hospital outpatients, and one group of graduate students in psychology (n=116) 2) Convenience sample of adult outpatients (n=172), graduate students (n=108), and undergraduate students (n=88)	1) Principal solution factor analysis, with orthogonal varimax rotation and iteration. 2) Principal components factor analysis with orthogonal varimax rotation on revised scale and then on just the two factors being examined in this scale.	1) Identified 5 factors. The first two factors tapped Life purpose and satisfaction, and the Self-confidence factors. 2) Obtained 4 factors: Life purpose and satisfaction, Expression of emotions, Self-confidence during stressful situations, Nondefensive attitudes during conflicts.
Ledbetter, M.F., Smith, L.A., Fischer, J.D., Vosler-Hunter, W.L., Chew, G.P. (1991)	Test the Validity of the Spiritual Well-Being Scale (SWBS)	SWBS: Religious Well-Being subscale, Existential Well-Being subscale	Archival data n SWBS from two religious samples with high church attendance: One sample: 285 participants with an average age of 47.3 years. Second sample: 319 participants with an average age of 38. Majority ethical and 'born again' Christians.	Confirmatory factor analyses, Chi-square, Adjusted Goodness of Fit Index, and Root Mean Square Residual to examine goodness of fit for either a one-factor model of spiritual well-being or Ellison's proposed two factor model.	Both one-factor and two-factor models were poor fits to data obtained. The two factor model fit the data closer than the one factor. Proposed that the best factorial conceptualization would involve additional factors or a reorganization of the items into different factors. Proposed that factors are multidimensional rather than the initially conceptualized unidimensional factors.

Table F-1. Continued

Author and Date	Purpose	Variables of Interest	Sample Used	Statistical Procedure	Findings
Garratt, A.M., Ruta, D.A., Abdalla, M.I., Buckingham, J.K., & Russell, I.T. (1993)	Objective assessment of validity, reliability, and acceptance of SF-36 as a measure of patient outcome for patients with common clinical conditions.	5 factors of SF-36: Physical functioning; Mental health and energy; Social functioning, pain, and role limitations attributable to physical problems; General health perception; Role limitations attributable to emotional problems	1700 patients ages 16-86 with one of four chronic conditions from clinics and training practices in Scotland and comparison sample of 900 members of general population.	1) Principal components factor analysis with orthogonal rotation 2) Confirmatory factor analysis	Confirmed 5 factors proposed by SF-36
Mathew, R.J., Mathew, V.G., Wilson, W.H., Georgi, J.M. (1995)	Evaluate the Mathew Materialism-Spiritualism Scale (MMSS) for possible use in substance abuse research	6 scales of the MMSS: God or a belief in a power that guides the universe, Religious, Mysticism, Spirits, Character, Psi	Individuals recovering from substance abuse with a minimum of 6 months abstinence (n=62). Mean age=42.8; 72.6% Christian. Comparison controls: clergy people (n=20), and general controls (n=61). Mean age=33.3 years. 85% Christian.	1) Pearson Product moment correlations 2) Principal axis Factor analysis with promax rotation 3) ANOVA - 3 groups compared on each of the 6 MMSS components	1) Some overlap among the scales but they were not assessing the same aspects of spirituality. 2) 5 clear factors: Spirit and Psi, God, Character, Mysticism, and Religion 3) Character was most sensitive subscale in distinguishing among groups; thus, personality is significant to recovery. Mysticism was next most sensitive subscale. Psi and Spirits were less useful in distinguishing among groups.
Vella-Brodrick, D.A. & Allen, F.C. (1995)	Test the validity of the Mental, Physical, Spiritual Well-Being Scale (MPS)	Holistic well-being: Mental well-being, Physical well-being, and Spiritual well-being subscales	1) 129 employees at research organization and 229 university students 2) Weight training group (n=30), Prayer group (n=30), Chess group (n=28). Convenience sample of 233 adults.	1) Exploratory factor analysis 2) Discriminant factor analysis	1) 3 factors representing: mental, physical, and spiritual well-being. 2) Scores on the 3 subscales predicted membership in one of the three activity groups as expected.

Table F-1. Continued

Author and Date	Purpose	Variables of Interest	Sample Used	Statistical Procedure	Findings
Buck (1996)	Determine the importance of 5 dimensions of health to overall, individual to adult health, and to explore perceived overall health as an indicator of wellness.	5 different profiles of health: Physiological (SF-36 and self-reports), Psychological (General Well-Being Scale), Psychosocial Maturity (MEPSI), Family functioning (FACES II), Spiritual Experiences (INSPIRIT and Spiritual Well-Being Scale)	Convenience sample of 233 adults 19-77 years old with a mean of 45 years old.	1) Cluster analyses: principal components factor analysis with iteration, or orthogonal rotation. 2) Discriminant Analysis 3) Comparison of Means 4) One Way ANOVA 5) 2 hierarchical regression analyses using 2 measures of spirituality	1) 5 similar factors to Neuman: Physiological, Psychological, Sociocultural, Developmental, and Spiritual 2) Validated significance of and refined clusters 3) There was higher SWB in the healthiest group, yet the second healthiest group was not significantly lower on overall health. The most negative dimension was spirituality, and the most positive dimensions were psychological and physiological health. 4) Clusters are significantly different in perceived overall health. Individuals that were above the mean on all dimensions, reported the highest overall health, but could not be characterized by any one dimension. Confirmed that wellness involves optimal functioning in all dimensions. 5) Found that spirituality did not mediate the effects of other dimensions, but core spiritual experiences played a significant and independent role when used in the equation to overall health. The INSPIRIT and RWB were not significantly correlated to overall health. EWB had a higher correlation, but INSPIRIT made a significant contribution.

Table F-1, Continued

Author and Date	Purpose	Variables of Interest	Sample Used	Statistical Procedure	Findings
Hall, T.W. & Edwards, K.J. (1996)	Factor analyses of the Spiritual Assessment Inventory (SAI) - a theoretically-based measure of spiritual maturity viewed from a Judeo-Christian perspective. Considered holistic because components of psychological growth and spiritual awareness that are proposed to be synergistic.	1) Test original version of SAI (n=40) with two hypothesized dimensions of spiritual maturity: awareness of God (designed to reflect the maturity of spiritual capacities), and quality of relationship with God (designed to reflect psychological maturity). 2) Test construct validity of revised and expanded version of SAI (n=63) 3) Test validity of 5 subscales of SAI (n=43) through correlations with Bell Object Relations Inventory	1) 193 college students 2) 470 college students from 2 local universities 3) 470 college students from 2 local universities	1) Exploratory factor analysis with oblique rotation 2) Exploratory confirmatory factor analysis on 43 extracted items with loadings above .30 on all factors. 3) Pearson Product Moment Correlations run with four subscales of the BORI (with four object-relations subscales)	1) Confirmed theoretical framework, but suggested construct may be more factorially complex on the Quality dimension. For second study, expanded this dimension to include 3 levels of relationships: Unstable, Grandiose, and Realistic Acceptance to produce a multidimensional model of the Quality construct. 2) Confirmed 5 factor solution is best: Instability, Defensiveness, Awareness, Realistic Acceptance, Grandiosity 3) Correlations of SAI subscales with BORI supported distinction between Awareness and Quality. Instability and Realistic Acceptance had higher correlations than Awareness subscale. These SAI subscales were only moderately correlated. Grandiosity scale is the only Quality factor that did not correlate with any of BORI scales. Validity of Grandiosity subscale remains to be tested in future. Led to the separation of Work and Leisure scale into two scales.
Hattie et al. (in press)	Validation and testing of the revised version of the Wellness Evaluation of Lifestyle (WEL-R)	5 Life Tasks with 17 total factors: 1) Spirituality/ Essence 2) Self-Regulation 3) Work and Leisure 4) Friendship 5) Love	Undergraduates, graduates, corporation mid-level managers, and professional counselors (n=1394)	Factor analysis	

Table F-1. Continued

Author and Date	Purpose	Variables of Interest	Sample Used	Statistical Procedure	Findings
Hattie et al. (in press)	Validation of the Wellness Evaluation of Lifestyle (WEL-J) with 73 items	5 Factors of: 1) Spirituality/ Essence 2) Self-Regulation 3) Work and Leisure 4) Friendship 5) Love	Undergraduates, graduates, professional counselors, and corporate mid-level managers (n=2295) Composite Sample	Factor analysis	Highest scores according to means were found for Love, Friendship, Self-care. Next highest were Sense of worth, Gender Identification. Lowest were Realistic Beliefs, Nutrition, Works, Exercise.
Hattie et al. (in press)	Determine factor structure of WEL-J	5 Factors of WEL-J: Existential Self (spirituality, self-care, gender identification, cultural identity), Social self (friendship and love), Interactive Self (intelligence, humor, control, work, emotional awareness), Intraactive Self (realistic beliefs, leisure, stress management, sense of worth), Physical Self (exercise and nutrition)		Maximum-likelihood exploratory factor analysis of the 17 scales of the WEL-J	17 factors each loaded onto the expected factor. Few cross-loadings except for Intellectual Stimulation and Sense of Control which loaded onto the same factor. Circumplex patterning apparent only in part, but no longer supported Spirituality as the core. Instead a hierarchical model was suggested by the correlations with wellness at the core, and spirituality offering an equal contribution as the other dimensions.
Hatch et al. (2000)	Test the validity of revised Spiritual Inventory and Belief Scale (SIBS-R) (n=22)	Four factors: 1) External/ritual (spiritual activities or belief in an external power) 2) Internal/fluid (internal beliefs and growth) 3) Existential/ Meditative 4) Humility/ Personal Application	Medical students, elderly, and nurses	Factor analysis	Four factors emerged: 1) Core Spirituality (connection, meaning, faith, involvement, and experience) 2) Spiritual perspective/ Existential 3) Personal Application/ humility 4) Acceptance/ Insight



APPENDIX G  
TABLE OF HOLISTIC HEALTH LABELS

Table G-1. Holistic Health Labels

Instrument	Number of Factors	Focus	Labels for Scales
Neuman's Systems Model of Health (Neuman, 1989)	5 Dimensions	A holistic model of health	5: Physical; Psychological Well-being; Developmental; Sociocultural; Spiritual
Short-Form 36 (Ware & Sherbourne, 1992)	5 Factors: Physical; Mental and Energy; Role limitations due to physical illness, social and pain; General health; and Role limitations due to emotional illness	A primary care instrument that taps health perception and is suitable for the general population.  Measures 3 aspects of health: functional health, well-being, and overall evaluation of health	8 scales: physical; mental; energy; role limitations due to physical; social; pain; general health; role limitations due to emotional illness
DUKE Health Profile (Parkerson, 1999)	5 Factors: Physical, Mental, Social, Perceived health; and Disability	Measure of functional health, or health-related quality of life.	11 scales: 6 measure functional health (physical; mental; social; general; perceived health; and self-esteem). 5 measure dysfunctional health (anxiety; depression; anxiety-depression; pain; disability)

Table G-1. Continued

Instrument	Number of Factors	Focus	Labels for Scales
Mental, Physical, Spiritual Well-Being Scale (MPS) (Vella-Brodrick, 1995)	3 Factors: Physical, Mental; Spiritual	Measure of holistic health	3 scales: physical; mental; and spiritual
Lifestyle Assessment Questionnaire (LAQ) (National Wellness Institute, 1983)		Measure of wellness	10 scales: exercise; nutrition; self-care; vehicle safety; drug usage, environmental awareness, emotional management, intellectual wellness, occupational wellness, and spiritual wellness
Testwell (National Wellness Institute, 1988)		Measure of wellness	12 scales: physical fitness and nutrition; medical self-care; safety; social awareness; environmental wellness; sexuality; emotional awareness; emotional management; occupational wellness; intellectual wellness; spirituality; values

Table G-1. Continued

Instrument	Number of Factors	Focus	Labels for Scales
Wellness Evaluation of Lifestyle (WEL) Hattie, et al. (in press)	5 Factors: Existential Self; Social Self; Interactive Self; Intraactive Self; Physical Self	Holistic Wellness	17 scales: Spirituality; Self-care; Gender identification; Cultural identity (Existential self); Friendship; Love (Social Self); Intelligence; Humor; Control; Work; Emotional Awareness (Interactive Self); Realistic Beliefs; Leisure; Stress Management; Sense of Worth (Intraactive Self); Exercise; Nutrition (Physical Self)
Health Promoting Life-Style Profile II (HPLP II) (Walker, Sechrist, & Pender, 1987)		Wellness and health-promoting life-styles	6 scales: spiritual growth; health responsibility; physical activity; nutrition; interpersonal relations, and stress management.
Perceived Wellness Survey (PWS) (Adams, Bezner, & Steinhardt, 1997)		Multi-dimensional measure of perceived wellness	6 scales: physical; social; psychological; intellectual; emotional; spiritual
Spiritual Assessment Scale (Howden, 1992 as in MacDonald, Friedman & Kuentzel, 1999a)	4 Factors	An instrument designed for use in nursing research to measure spirituality without relying upon religious theory or terminology	4 scales: Unifying Interconnectedness; Purpose and Meaning in Life; Innerness or Inner Resources; Transcendence

Table G-1. Continued

Instrument	Number of Factors	Focus	Labels for Scales
Spiritual Orientation Inventory (SOI) (Elkins, Hedstrom, Hughes, Leaf, & Saunders, 1988)	9 dimensions of spirituality from literature review	Based on humanistic model to measure spirituality of those not affiliated with traditional religion	9 scales: transcendent dimension; meaning and purpose in life; mission in life; sacredness of life; material values; altruism; idealism; awareness of the tragic; fruits of spirituality
Psychomatrix Spirituality Inventory (PSI) (Wolman, 1997)	7 categories of spiritual experiences	Measures what spirituality means in America today	7 scales: awareness of transcendent source; spiritual activities or practices; use of healing practices; experience of physical or emotional trauma; body awareness; religious history; current religious practices
Spiritual Inventory and Belief Scale-Revised (SIBS-R) (Hatch, 2000)	4 factors	Measure of spirituality to correct for problems with religious terminology and for use in medical field	4 scales: core spirituality; spiritual perspective/ existential; personal application/ humility; acceptance/ insight
Delphi Study of Spirituality (Ingersoll, 1998)	10 dimensions of spirituality	Consensus of spirituality across religious traditions (a cross-cultural definition)	10: Knowledge-Learning; Connectedness; Conception of Absolute or Divine; Meaning; Forgiveness; Hope; Experience-ritual; Present-centeredness; Sense of Freedom; Mystery

Table G-1. Continued

Instrument	Number of Factors	Focus	Labels for Scales
Expressions of Spirituality Inventory (ESI) (MacDonald, 1997)	5 Factors: Cognitive Orientation towards Spirituality (nontheistic); Experiential; Phenomenological Dimension; Existential Well-being; Paranormal; Religiousness.	Common factor structure for instrument of spirituality	5 scales: Cognitive Orientation towards Spirituality (nontheistic); Experiential; Phenomenological Dimension; Existential Well-being; Paranormal; Religiousness.
National Institute of Healthcare Research panel (Fetzer, 1999)	10 domains	10 domains of spirituality with links to health outcome	10: Religious/Spiritual Experiences; Religious/Spiritual Values; Religious/Spiritual Motivation for Regulating and Reconciling Relationships; Religious/Spiritual Coping; Religious/Spiritual Support; Religious/Spiritual Commitment; Religious/Spiritual Preference or Affiliation; Religious/Spiritual Private Practices; Religious/Spiritual History

## APPENDIX H

### 5-FACTOR SOLUTION

Table H-1. 5-Factor Solution

Factor 1: Environmental Engagement	Factor 2: Psychosomatic Expression	Factor 3: Physical Functioning	Factor 4: Spiritual Connection	Factor 5: Purpose and Resilience
WEL: Sense of Control. Perception that one has an impact on what happens to them. .742.	Duke: Anxiety-Depression. .865	Duke: Physical. Capacity in last week for ambulation and symptoms of pain. .714	SIBS: Core Spirituality. Practice and belief that spiritual life is important to being fulfilled; relationship with higher power. .924	ESI: Existential Well-Being. Meaning and Purpose. Ability to cope with difficulties. .672
WEL: Intellectual Stimulation and Problem Solving. Open-minded, flexible, curious, use of creative capacities (cognitive flexibility). .701	Duke: General health. Physical, mental, and social. .847	PWS: Physical wellness. Positive perception and expectation of physical health. .687	ESI: Cognitive Orientation. Perception of spirituality as relevant and important to personal functioning. .913	PWS: Psychological wellness. Optimism, expectation for positive outcomes. .638
WEL: Work. Perception that one's skills are used effectively and work is within one's control. .682	Duke: Anxiety. Social self-esteem (comfort with people and family relations to get along with). .840	Rand: General health. In past 4 weeks, rating of own health compared to others and expectations for health. .677	ESI: Religiousness. Beliefs and attitudes, behavior and religious practice. More intrinsic. .879	PWS: Spiritual wellness. Perception of meaning and purpose. .602
WEL: Friendship. Sense of connection with others and social support. .666	Duke: Depression. Personal self-esteem (like who I am, give up too easily), depressed feelings, sleep, fatigue. .800	Rand: Pain. In past 4 weeks, bodily pain that interfered with normal work. .616	WEL: Spirituality. Beliefs and behavior practiced, including hope and optimism, prayer, and meditation. .878	PWS: Emotional Wellness. Secure self-identity and positive self-regard. .577
WEL: Sense of Worth. Self-esteem and accepting one's imperfections. .648	Duke: Mental health. Depressed feelings, nervousness, concentration, and personal self-esteem. .793	Duke: Pain. In past week, hurting or aching. .548	ESI: Experiential/Phenomenological. Experiential expressions of spirituality (peak, transcendental). .685	Rand: Emotional well-being. Happy, calm, peaceful. .534

Table H-1. Continued

Factor 1: Environmental Engagement	Factor 2: Psychosomatic Expression	Factor 3: Physical Functioning	Factor 4: Spiritual Connection	Factor 5: Purpose and Resilience
WEL: Leisure. Activities for intrinsic satisfaction. .636	Duke: Self-esteem. Personal (like who I am, give up too easily) and social (get along with others). .647	Rand: Role-limitations Physical. In past 4 weeks, limitations due to physical health. .52	SIBS: Personal Application and Humility. Help without expecting anything in return, focus on change in self vs. others. .406	PWS: Social wellness. Perception of social support and being valued support provider. .503
WEL: Gender Identification. Satisfaction and confidence with gender identity. .619	Duke: Physical health: Capacity in last week for ambulation and symptoms of pain. .431	Duke: Perceived health. In past week - basically 'healthy'. .526		WEL: Realistic Beliefs. Ability to accept self as imperfect. .502
WEL: Emotional Expressiveness. Expressing wide range of emotions. .594	Duke: Social health. Participation in social activities; social self-esteem (not easy to get along with; comfortable around people; happy with family relationships). .403	Rand: Energy/fatigue in past 4 weeks. .464		PWS: Intellectual Wellness. Energized by intellectually stimulating activity. .408
WEL: Humor. Able to appreciate and use positive humor. .561		Rand: Social functioning. In past 4 weeks, physical health or emotional problems that interfered with social activities. .446		
PWS: Intellectual wellness. Energized by intellectually stimulating activity. .555		Duke: Disability. Confinement due to illness in preceding week. .406		
WEL: Exercise. Systematic activity with intent of improved health or physical performance. .537		Duke: General health. Physical, mental, and social. .400		
PWS: Emotional Wellness. Secure self-identity and positive self-regard. .506				



Table H-1. Continued

Factor 1: Environmental Engagement	Factor 2: Psychosomatic Expression	Factor 3: Physical Functioning	Factor 4: Spiritual Connection	Factor 5: Purpose and Resilience
WEL: Love. Act of concern; perception that needs for closeness and touch met. (tactile) .500				
WEL: Nutrition. Eating and drinking habits. .496				
WEL: Stress Management. Self-management of stressors. .481				
PWS: Spiritual Wellness. Perception of Meaning and Purpose. .455				
ESI: Existential Spirituality. Meaning and Purpose, ability to cope with life difficulties. .444				
PWS: Social Wellness. Perception of social support and being valued support provider. .439				
PWS: Psychological wellness. Expectation for positive outcomes. .638				

## LIST OF REFERENCES

- Adams, T.B., Bezner, J.B. (2000). The Conceptualization and measurement of the spiritual and psychological dimensions of wellness in a college population. Journal of American College Health, 48 (4), 165-174.
- Adams, T. A., Bezner, J.B. & Steinhardt, M.A. (1997). The Conceptualization and measurement of wellness: Integrating balance across and within dimensions. American Journal of Health Promotion, 11, 3, 208-218.
- Andrews, M., Angone, K.M., Cray, J.V., Lewis, J.A. & Johnson, P.H. (1999). Nurse's handbook of alternative and complementary therapies. Springhouse, PA: Springhouse Corp.
- Atwood, J. D. & Maltin, L. (1991). Putting eastern philosophies into western psychotherapies. American Journal of Psychotherapy, XLV, 3, 368-382.
- Benson, H. (1975). The relaxation response. New York: Morrow.
- Bishop, M., Chih-Chin, C., Chetywn, C.H., Rahimi, M., Chan, F. & Rubin, S.E. (2000). Wellness promotion for people with disabilities in private-sector rehabilitation: A conceptual and operational framework. Journal of Rehabilitation Administration, 24, 2, 57-70.
- Brannon, L. & Feist, J. (1997). Health psychology: An introduction to behavior and health. Pacific Grove: Brooks/Cole.
- Brazier, J. E., Harper, R., Jones, N.M., O'Cathain, A., Thomas, K.J., Usherwood, T. & Westlake, L. (1992). Validating the SF-36 health survey questionnaire: New outcome measures for primary care. BMJ, 305, 160-4.
- Buck, G.M.L. (1996). Wellness: Relative importance of physiological health, psychological well-being, family relationships, psychosocial maturity, and spirituality. Dissertation Abstracts International, 57, (07-A), 3266.
- Capra, F. (1996). The Web of life. New York: Bantam Doubleday Dell Publishing Group, Inc.
- Chandler, C. K., Holden, J. M. & Kolander, C. A. (1992). Counseling for spiritual wellness: Theory and practice. Journal of Counseling and Development, 71(Nov/Dec), 168-175.

- Cousins, N. (1979). The Anatomy of an illness as perceived by the patient. New York: Bantam Books.
- Deay, F. D. (1995). Measures of spiritual well-being and type 'A' or type 'C' personality traits as predictors of cancer and/or coronary heart disease risk factors. Dissertation Abstracts International, 56, (09-B), 524.
- Donatelle, R., Snow, C. & Wilcox, A. (1999). Wellness: Choices for health and fitness. (2nd ed.). Belmont, CA: Wadsworth Publishing Co.
- Dreifuss, A. (1990). A Phenomenological inquiry of six psychotherapists who practice Buddhist meditation. Dissertation Abstracts International, 51 (5-B), 2617.
- Eberst, R. M. (1984). Defining health: A multidimensional model. JOSH, 54, 3, 99-104.
- Elkins, D. N., Hedstrom, L.J., Hughes, L.L., Leaf, J.A. & Saunders, C. (1988). Toward a humanistic-phenomenological spirituality: Definition, description, and measurement. Journal of Humanistic Psychology, 28, 4, 5-17.
- Ellison, G.W. (1983). Spiritual well-being: Conceptualization and measurement. Journal of Psychology and Theology, 11(4), 330-340.
- Ellison, C.G. & Levin, J.S. (1998). The religion-health connection: Evidence, theory, and future directions. Health Education and Behavior, 25, 6, 700-720.
- Ellison, G.W. & Smith, J. (1991). Toward an integrative measure of health and well-being. Journal of Psychology and Theology, 19,1, 35-48.
- Engel, G.L. (1980). The clinical application of the biopsychosocial model. American Journal of Psychiatry, 137, 535-544.
- Fetzer Institute (January, 1999). Multidimensional measurement of religiousness/spirituality for use in health research. (Publication): John E. Fetzer Institute.
- Fukuyama, M. A. & Sevig, T D. (1999). Integrating spirituality into multicultural counseling. Thousand Oaks: SAGE Publications.
- Garratt, A. M., Ruta, D.A., Abdalla, M.I., Buckingham, J.K. & Russell, I.T. (1993). The SF-36 health survey questionnaire: An outcome measure suitable for routine use within the NHS? BMJ, 306, 1440-4.
- Gorsuch, R. L. (1994). Toward motivational theories of intrinsic religious commitment. Journal for the Scientific Study of Religion, 33, 4, 315-326.
- Graham-Pole, J. (2001). "Physician, heal thyself": How teaching holistic medicine differs from teaching CAM. Academic Medicine, 76, 6, 662-664.

- Granello, P. (2000). Integrating wellness work into mental health private practice. Journal of Psychotherapy in Independent Practice, 1, 1, 3-16.
- Gribbin, J. (1998). The search for superstrings, symmetry, and the theory of everything. Boston: Little, Brown, and Company.
- Gross, S. J. (1980). The holistic health movement. Personnel and Guidance Journal, October, 96-100.
- Hall, T. W., & Edwards, K.J. (1996). The initial development and factor analysis of the spiritual assessment inventory. Journal of Psychology and Theology, 24, 3, 233-246.
- Hatch, R. (2000). Progress on revision and validation of SIBS scale since 6/98 JFP article (Manual/report ). Gainesville: University of Florida.
- Hatch, R. L., Burg, M. A., Naberhaus, D.S. & Hellmich, L.K. (1998). The Spiritual involvement and beliefs scale. The Journal of Family Practice, 46, 6, 476-486.
- Hattie, J. A., Myers, J.E., & Sweeney, T.J. (in press). A multidisciplinary model of wellness: The development of the Wellness Evaluation of Lifestyle. Journal of Counseling and Development.
- Hawks, S. R., Hull, M. L., Thalman, R. L. & Richins, P. M. (1995). Review of spiritual health: Definition, role, and intervention strategies in health promotion. American Journal of Health Promotion, 9, 5, 371-378.
- Hays, R. D., Sherbourne, C. D. & Mazel, R. M. (1993). The RAND 36-Item health survey 1.0. Health Economics, 2, 217-227.
- Hermon, D. A. & Hazler, R. J. (1999). Adherence to a wellness model and perceptions of psychological well-being. Journal of Counseling and Development, 77 (Summer), 339-343.
- Hettler, W. (1984). Wellness: Encouraging a lifetime pursuit of excellence. Health Values, 8, 13-17.
- Hiatt, J.F. (1986). Spiritual, medical, and healing. Southern Medical Journal, 79, 736-743.
- Human Genome Project (2002). Discovery of the gene code. Oak Ridge National Laboratory. <http://www.ornl.gov/hgmis/project/progress.html>. Accessed September 2002.
- Ingersoll, R. E. (1994). Spirituality, religion, and counseling: Dimensions and relationships. Counseling and Values, 38, 98-111.

- Ingersoll, R. E. (1998). Refining dimensions of spiritual wellness: A Cross-traditional approach. Counseling and Values, 42(April), 156-165.
- Jenkinson, C., Wright, L. & Coulter, A. (1994). Criterion validity and reliability of the SF-36 in a population sample. Quality of Life Research, 3, 7-12.
- Kaku, M. (1997). Visions: How science will revolutionize the 21st century. New York: Bantam Doubleday Dell Publishing Group, Inc.
- Kass, J.D., Friedman, R., Leserman, J. Caudill, M., Zuttermeister, P.C. & Benson, H. (Fall 1991). An Inventory of positive and psychological attitudes with potential relevance to health outcomes: Validation and preliminary testing. Behavioral Medicine, 121-129.
- Larson, D. B. (1999). The Conceptualization of health. Medical Care Research and Review, 56, 2, 123-136.
- Ledbetter, M.F., Smith, L.A., Fischer, J.D., Vosler-Hunter, W.L. & Chew, G.P. (1991). An Evaluation of the construct validity of the spiritual well-being scale: A confirmatory factor analytic approach. Journal of Psychology and Theology, 19(1), 49-55.
- Levin, J.S., Larson, D.B. & Puchalski, C.M. (1997). Religion and spirituality in medicine: Research in education. Journal of the American Medical Association, 278, 9, 792-793.
- MacDonald, D. A. (1997). The Expressions of spirituality inventory: Test development, validation, and scoring information (Instrument manual). Detroit: University of Detroit Mercy.
- MacDonald, D. A. (2000). The expressions of spirituality inventory: Test development, validation, and scoring Information (Instrument Manual ). Detroit: University of Detroit Mercy.
- MacDonald, D. A., Friedman, H. L. & Kuentzel, J.G. (1999a). A survey of measures of spiritual and transpersonal constructs: Part One-Research Update. The Journal of Transpersonal Psychology, 31, 2, 137-151.
- MacDonald, D. A., Kuentzel, J.G. & Friedman, H.L. (1999b). A Survey of measures of spiritual and transpersonal constructs: Part two-additional instruments. The Journal of Transpersonal Psychology, 31, 2, 155-177.
- MacDonald, D. A., LeClair, L., Holland, C.J., Alter, A. & Friedman, H. L. (1995). A survey of measures of transpersonal constructs. The Journal of Transpersonal Psychology, 27, 2, 171-235.

- Mathew, R.J., Mathew, V.G., Wilson, W.H. & Georgi, J.M. (July 1995). Measurement of materialism and spiritualism in substance abuse research. Journal of Studies on Alcohol, 470-475.
- McKee, D. D. & Chappel, J. N. (1992). Spirituality and medical practice. The Journal of Family Practice, 35, 2, 201-208.
- McSherry, W. Draper, P. (1998). The debates emerging from the literature surrounding the concept of spirituality as applied to nursing. Journal of Advanced Nursing, 27, 683-691.
- Millar, J. S. & Hull, C. (1997). Measuring human wellness. Social Indicators Research, 40, 147-158.
- Miller, J.J., Fletcher, K. & Kabat-Zinn, J. (1995). Three-year follow-up and clinical implications of a mindfulness meditation-based stress reduction intervention in the treatment of anxiety disorders. General Hospital Psychiatry, 17, 192-200.
- Miller, W. & Thoresen, C. (1999). Spirituality and health. In W. R. Miller (Ed.), Integrating Spirituality Into Treatment (pp. 3-18). Washington, D.C.: American Psychological Association.
- Minkler, M. & Wallerstein, N. (1997). Improving health through community organization and community building. In F. M. L. K. Glanz, B.K. Rimer (Ed.), Health Behavior and Health Education: Theory, Research, and Practice (2nd ed., pp. 241-269). San Francisco, CA: Jossey-Bass Publishers.
- Moberg, D. O. (1979). The Development of social indicators of spiritual well-being for quality of life research: Papers and problems. Sociological Analysis, 40, 11-26.
- Moberg, D.O. (1984). Subjective measures of well-being. Review of Religious Research, 25, 351-364.
- Mueller, P. S., Plevak, D.J. & Rummans, T.A. (2001). Religious involvement, spirituality, and medicine: Implications for clinical practice. Mayo Clinic Proceedings, 76, 1225-1235.
- Myers, J. E., Sweeney, T. J. & Witmer, J. M. (2000). The Wheel of wellness counseling for wellness: A Holistic model for treatment planning. Journal of Counseling and Development, 78 (Summer), 251-266.
- National Wellness Institute (2000). Lifestyle Assessment Questionnaire. National Wellness Institute, Inc. <http://www.nationalwellness.org/home>. Accessed September 2002.
- National Wellness Institute (2000). Testwell. National Wellness Institute, Inc. <http://www.nationalwellness.org/home/definition/>. Accessed September 2002.

- Neuman, B. (1989). The Neuman Systems Model, (2<sup>nd</sup> ed). Norwalk, CT: Appleton & Lange.
- Neuman, B. (1995). The Neuman Systems Model. (3<sup>rd</sup> ed.). Norwalk: Appleton & Lange.
- Ornish, D. (1991). Can life-style changes reverse coronary atherosclerosis? Hospital Practice (May 15), 123-132.
- Ornish, D., Brown, S.E., Scherwitz, L.W., Billings, J.H., Armstrong, W.T., Ports, T.A., McLanahan, S.M., Kirkeeide, R.L., Brand, R.J. & Gould, K.L. (1990). Can lifestyle changes reverse coronary heart disease? The lifestyle heart trial. Lancet, 336, 129-133.
- Paloutzian, R. F. & Ellison, C. W. (1991). Manual for the Spiritual Well-Being Scale (Manual Version). Nyack, NY: Life Advance, Inc.
- Parkerson, J., G.R. (1999). Duke Health Profile (DUKE), User's guide for Duke health measures (pp. 5-44). Durham, NC: Duke University Medical Center.
- Parkerson, G. R., Jr., Broadhead, W.E. & Tse C-K.J. (1990). The Duke Health Profile, a 17-item measure of health and dysfunction. Med Care, 28, 1056-1072.
- Parkerson, G. R., Jr., Broadhead, W.E. & Tse C-K.J. (1992). Quality of life and functional health of primary care patients. Journal of Clinical Epidemiology, 45(11), 1303-1313.
- Parkerson, G. R., Jr., Broadhead, W.E. & Tse C-K.J. (1995). Health status and severity of illness as predictors of outcomes in primary care. Medical Care, 33, 53-66.
- Parkerson, G. R., Jr., Willke, R.J. & Hays, R.D. (1999). An international comparison of the reliability and responsiveness of the Duke Health Profile for measuring health-related quality of life of patients treated with alprostadil for erectile dysfunction. Med Care, 37, 56-67.
- Puchalski, C. M. & Larson, D. B. (1998). Developing curricula in spirituality and medicine. Academic Medicine, 73, 9, 970-974.
- Pullen, C., Walker, S.N. & Fiandt, K. (2001). Determinants of health-promoting lifestyle behaviors in rural older women. Family Community Health, 24, 2, 49-72.
- RAND (1992). RAND 36-item health survey 1.0: RAND health sciences program. Santa Monica: RAND.
- Randall, J. L. (1996). Evolution of the new paradigm. Primary Care, 23, 1, 183-198.
- Richards, P.S., & Bergin, A.E. (1997). A spiritual strategy for counseling and psychotherapy. Washington, DC: American Psychological Association.

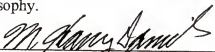
- Seaward, B. L. (1996). Managing Stress. (2nd ed.). Sudbury: Jones & Bartlett.
- Seaward, B. L. (2001). Health and the Human Spirit. Needham Heights, MA: Allyn & Bacon.
- Simonton, O. C., Matthews-Simonton, S. & Creighton, J. (1978). Getting Well Again. Los Angeles: Tarcher Books.
- Spiegel, D. (1993). Psychosocial intervention in cancer. Journal of the National Cancer Institute, 85, 15, 1198-1205.
- Theodore, R. M. (1984). Utilization of spiritual values in counseling: An ignored dimension. Counseling Values, 28, 4, 162-168.
- Vella-Brodrick, D. (1995). A User's guide to the mental, physical and spiritual Well-being scale. (Manual ). Victoria, Australia: Monash University.
- Vella-Brodrick, D.A. & Allen, F.C.L. (1995). Development and psychometric validation of the mental, physical, and spiritual well-being scale. Psychological Reports, 77, 659-674.
- Waite, P. J., Hawks, S.R. & Gast, J.A. (1999). The correlation between spiritual well-being and health behaviors. Journal of Health Promotion, 13, 3, 159-162.
- Walker, S.N. (2002). Definitions of the HPLPII. Personal Communication, Nov. 2002.
- Walker, S. N., Sechrist, K.R. & Pender, N.J. (1987). The health-promoting lifestyle profile: Development and psychometric characteristics. Nursing Research, 36, 2, 76-81.
- Wallis, C. (1996). Medicine: Healing. Time, June 24, 59-62.
- Ware, J. J. & Sherbourne, C.D. (1992). The MOS 36-item short-form health survey (SF-36) I. Medical Care, 30, 473-83.
- Westgate, C. (1996). Spiritual wellness and depression. Journal of Counseling and Development, 75(Sept/Oct), 28-35.
- Witmer, J. M. & Sweeney, T. J. (1992). A Holistic model for wellness and prevention over the life span. Journal of Counseling and Development, 71(Nov/Dec), 140-147.
- Wolman, R. (1997). Spirituality: What does it mean to you? New Age Journal (September/October), 78-81.
- Zukav, G. (2001). The Dancing Wu Li Masters. New York: HarperCollins Publishers, Inc.



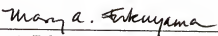
## BIOGRAPHICAL SKETCH

Stephanie Marie Webster was born in Fairfax, Virginia on April 25, 1969. After graduating from Park View High School in June 1987, she attended James Madison University where she received a bachelor's degree in psychology in 1991. In 1993, Dr. Webster obtained a master of education degree in counselor education from the University of Virginia. After graduation from the University of Virginia, Dr. Webster moved to Wilmington, North Carolina where she worked as a Residence Coordinator at the University of North Carolina-Wilmington. In 1994, Dr. Webster moved to Gainesville, Florida to pursue a doctoral degree in Mental Health counseling at the University of Florida. After proposing her dissertation, Dr. Webster accepted a position as a full-time Lecturer at the University of Florida in the Dial Center for Written and Oral Communication. After completing her dissertation in May of 2004, Dr. Webster continued as a full-time professor in Written and Oral Communication at the University of Florida.


I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

  
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